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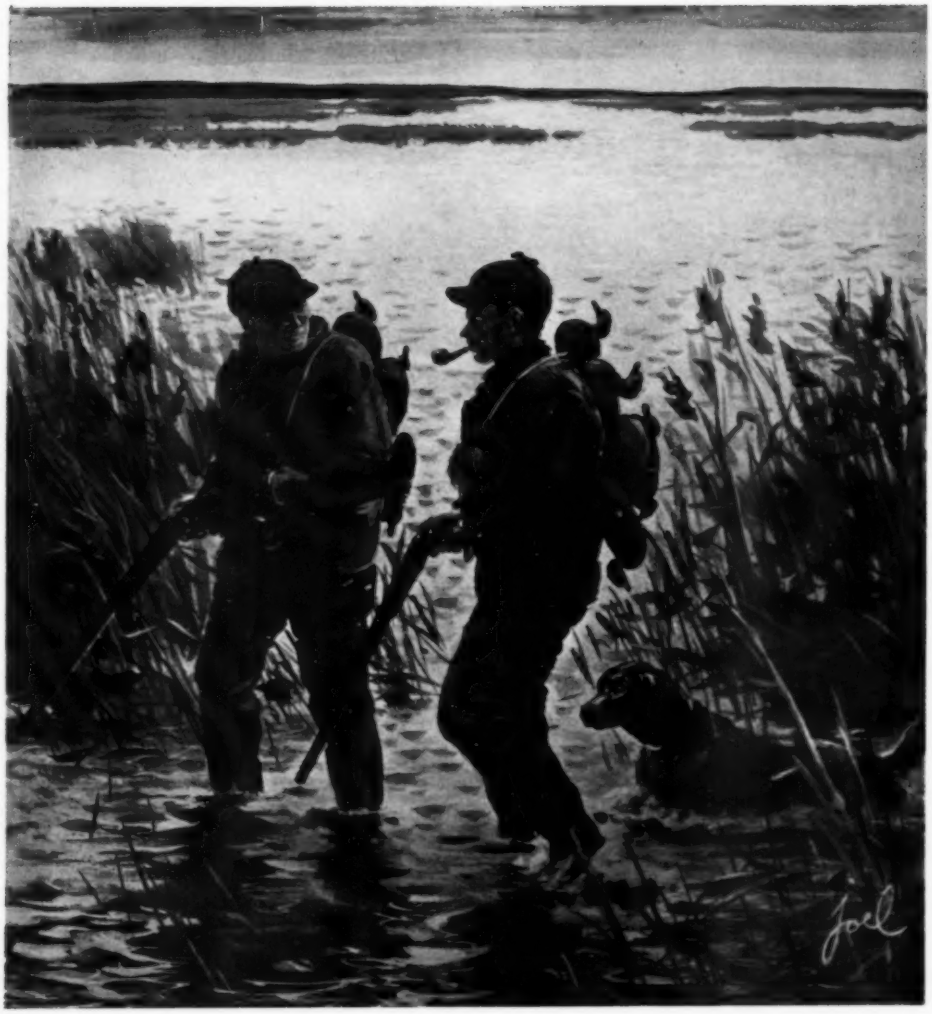
Drug and Cosmetic Industry



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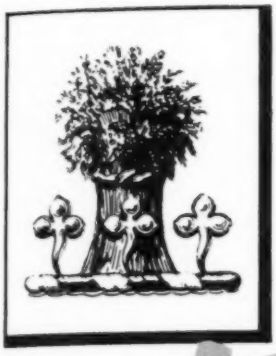

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DRUG & COSMETIC INDUSTRY

OCTOBER, 1953

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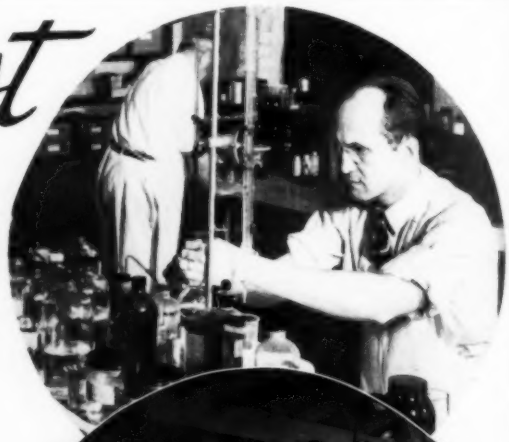

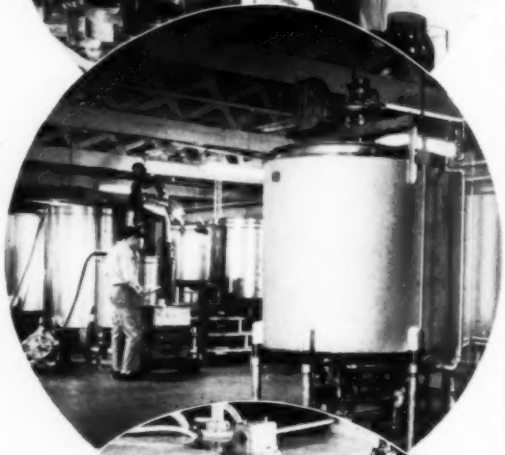

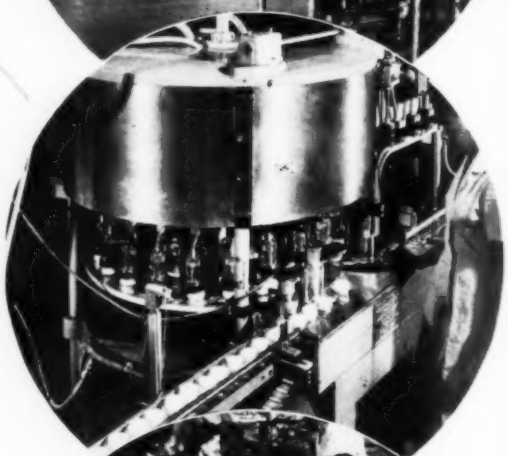

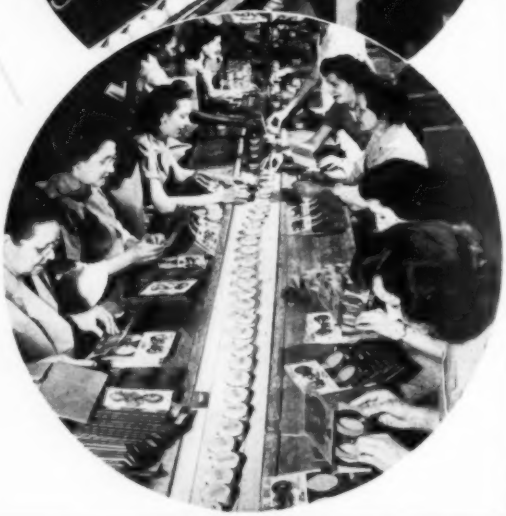

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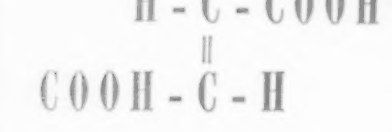

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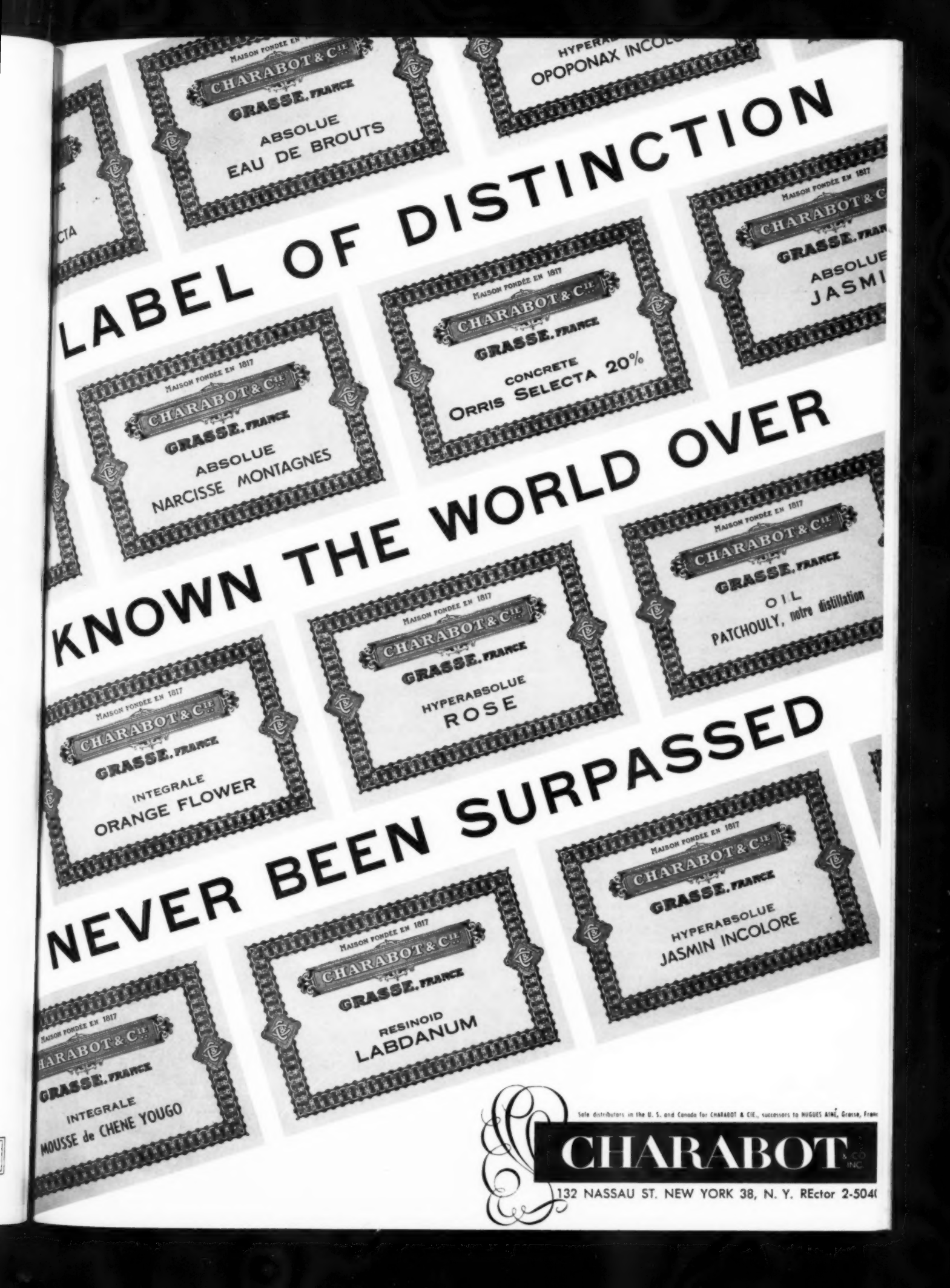
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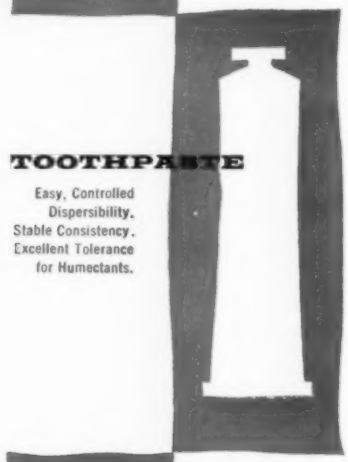

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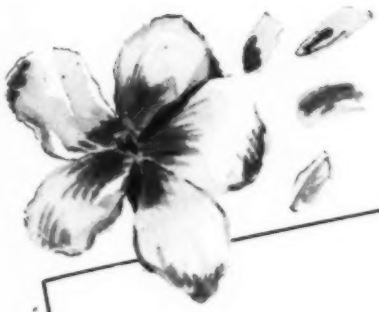

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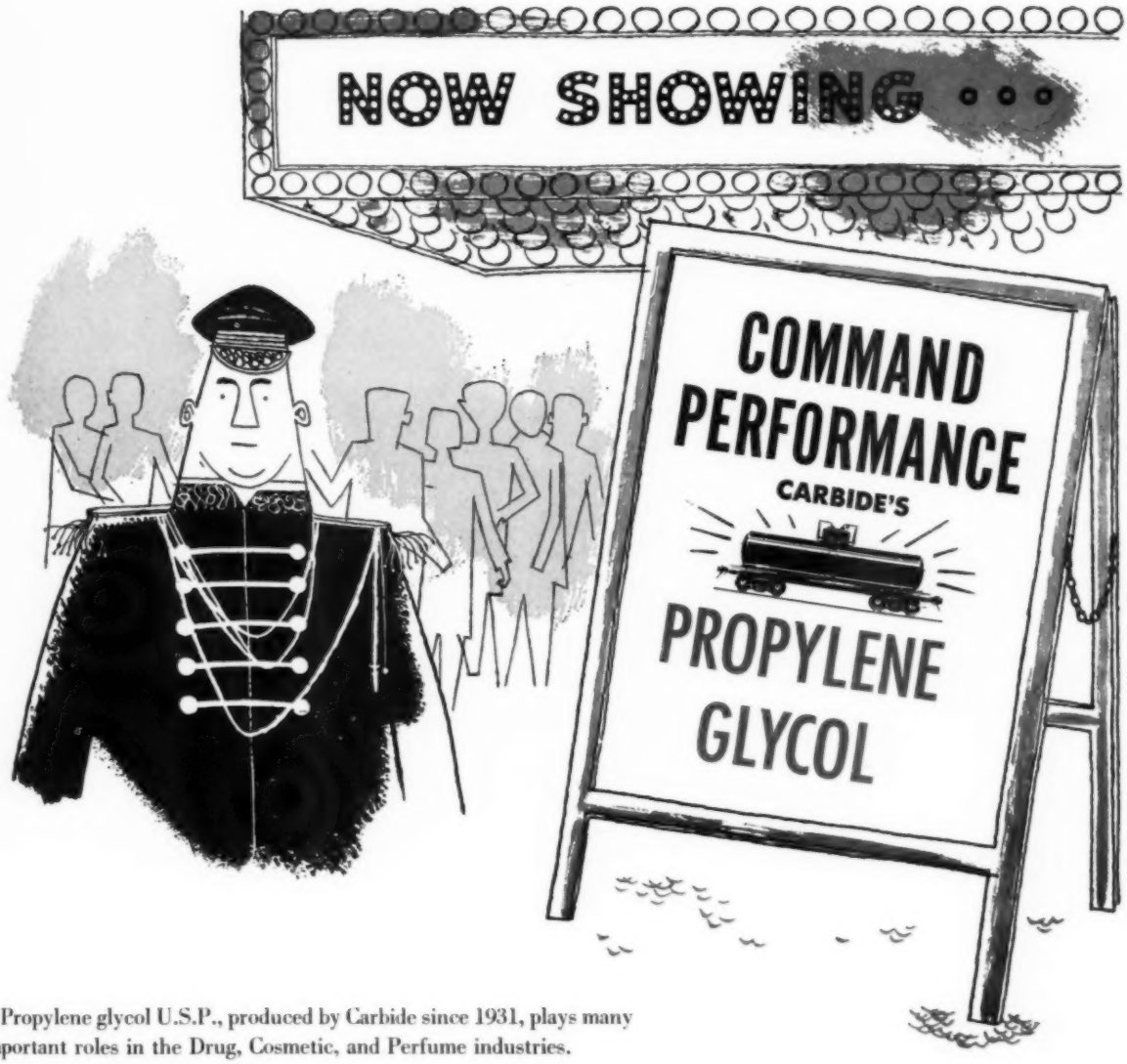

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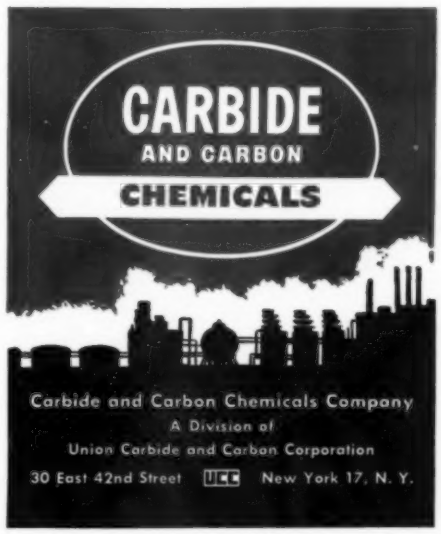

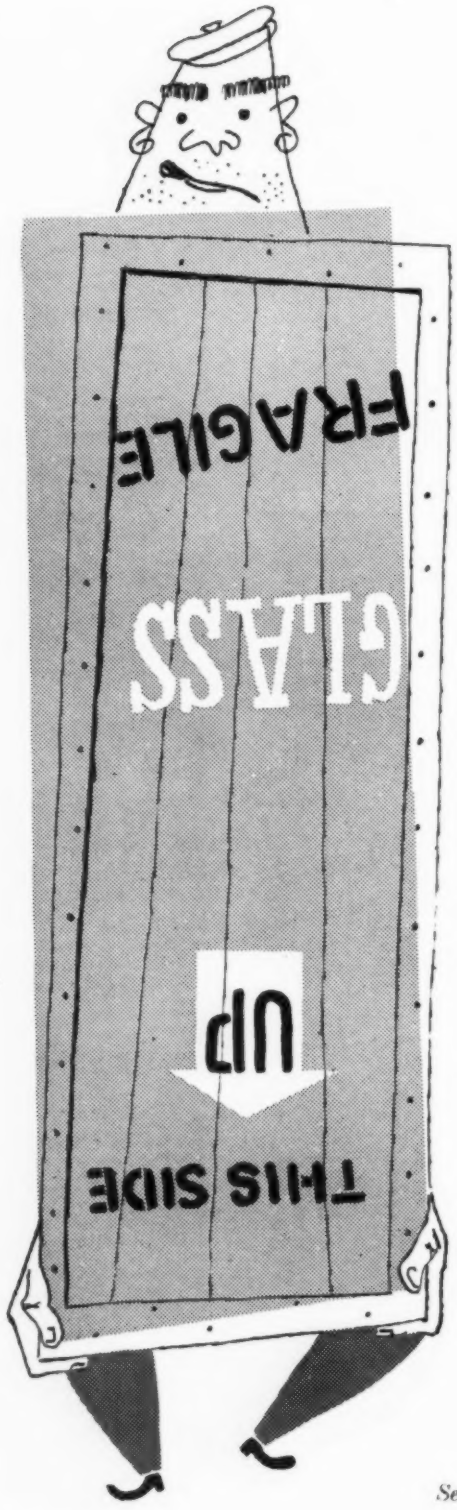

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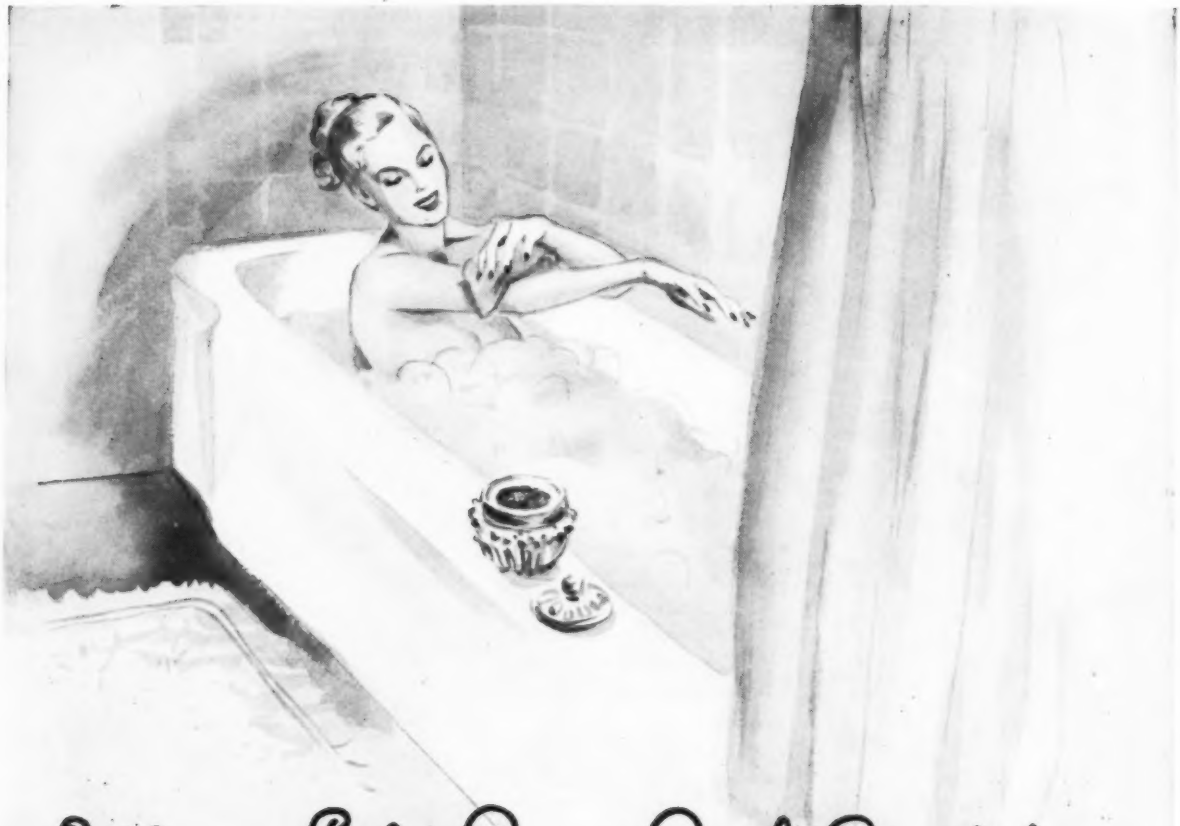

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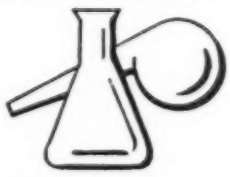
Dr. Otto Jacobi and Miss Gertrude Lantzsch examining subject

Shown here, studying the effects of a cosmetic on the skin surface, blood capillaries and skin temperatures of a subject, are Dr. Otto Jacobi, *right*, and Miss Gertrude Lantzsch, *left*.



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Kolmar has plants Coast to Coast in the United States, and plants in Canada, France and Australia.

Kolmar Laboratories, with one of the largest research and technical staffs in the world devoted exclusively to the development and manufacture of private label cosmetics, has taken a unique step in further expanding its research and services.

When Dr. Herbert Heinrich, Research Director of Kolmar Laboratories, contacted Dr. Otto Jacobi, chemist and physiologist, of Wiesbaden, Germany, he was very favorably impressed with his advanced methods in the field of cosmetics, especially his unique methods of studying the effects of cosmetics directly upon the skin.

As a result, Dr. Heinrich arranged that Dr. Jacobi and Miss Gertrude Lantzsch, who has been his assistant for 10 years, bring their entire laboratory to Milwaukee, including many special instruments developed by Dr. Jacobi.

This modern laboratory has been set up at the medical school of Marquette University where ideal working conditions, plus many technical advantages for fundamental cosmetic research are available.

Dr. Jacobi has specialized in skin physiology for 15 years. He studied at the University of Frankfurt am Main—Freiburg, Switzerland—and the University of Giessen, Germany. He is the author of 20 technical papers on the behavior and reaction of normal skin and the influence of cosmetics on normal and sub-normal skin.

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Kenneth Knox, a technician in our quality control laboratory, is thinking about *your needs* as he works . . . not just about an order number. Of course, he pays careful attention to specifications; but as he does his testing, he is not working with numbers . . . so much as with an individual who has a specific need. He knows exactly who is ordering the white oil being processed . . . knows exactly what it will be used for . . . knows a dozen little things about the "personality" of the order which never show up on specifications sheets.

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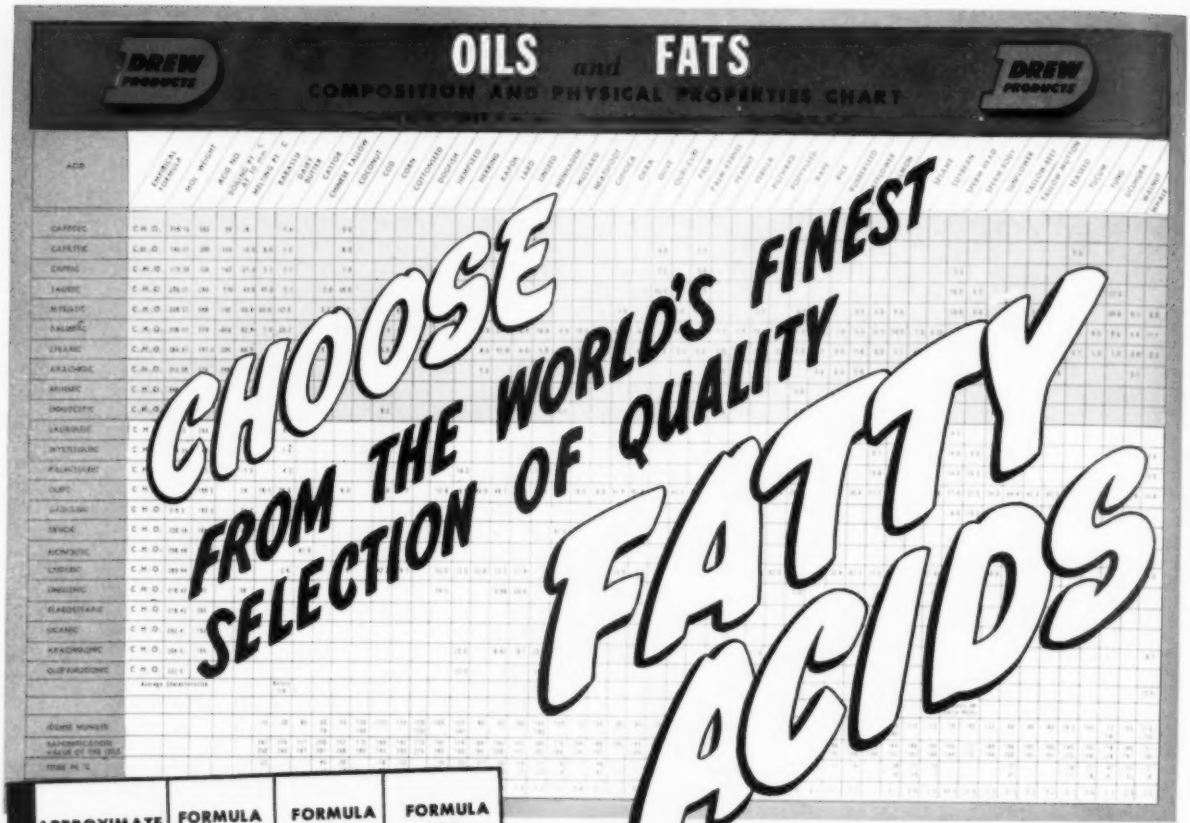

APPROXIMATE CHEMICAL COMPOSITION AND ATA	FORMULA 200 STEARIC ACID 65%	FORMULA 300 STEARIC ACID 70%	FORMULA 400 STEARIC ACID 85-90%
MYRISTIC	6.0%	6.0%	6.0%
PALMITIC	20.0%	21.0%	6.0%
STEARIC	70.0%	70.0%	85.0%
OLEIC	4.0%	3.0%	3.0%
FFA	99-103	99-103	99-103
TITRE°C.	56-57	58 Min.	60-64
IODINE VAL.	6 Max.	4 Max.	3 Max.
ACID VAL.	196-204	196-204	196-204
SAP. VAL.	196-204	196-204	196-204
COLOR	4.0/1.0	4.0/1.0	4.0/1.0

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These are but a few of the high quality fatty acids which DREW produces in volume. When you specify DREW, you specify the world's finest Fatty Acids.

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CSC AMINES

Furfurylamine (2-furanmethylamine)
$C_4H_3OCH_2NH_2$

Highly reactive heterocylic compound. Undergoes reactions typical of primary amines. Properties suggest application in the synthesis of dyestuffs, resins, pharmaceuticals, rubber, and petroleum additives.

Sp. Gr. at 25/4°C
(pure material) 1.0502
Boiling Pt. at 760 mm
(pure material) ..... 145-146°C
Melting Pt. ..... –70°C approx.

2-Hydroxyethyltrimethylammonium bicarbonate (45% aqueous solution)
$(CH_3)_3N(HCO_3)CH_2CH_2OH$

This quaternary ammonium salt appears to offer many possibilities as a latent alkaline catalyst for resins and other processes. Also as an intermediate for preparing choline salts.

Freezing Pt.
(45% solution) ..... –21.3°C
Refractive Index n_D at
25°C (45% solution)..... 1.3967

CSC ALKANOLAMINES

These compounds readily undergo a wide variety of reactions. They form substituted amides with acids, esters, anhydrides and acyl halides. They also react with other compounds including alkyl halides, aldehydes, ketones, and carbon disulfide.

The alkanolamines provide raw materials for synthesis; emulsifying agents in forms of their soaps, raw materials for textile specialties, drying oils, and synthetic resins.

2-Amino-1-butanol $CH_3CH_2CHNH_2CH_2OH$
Sp. Gr. at 20/20°C 0.944
Boiling Pt. at 760 mm ..... 178°C
Melting Pt. ..... –2°C

2-Amino-2-ethyl-1,3-propanediol
$CH_2OHC(C_2H_5)(NH_2)CH_2OH$
Sp. Gr. at 20/20°C..... 1.099
Boiling Pt. at 10 mm..... 152-153°C
Melting Pt..... 37.5-38.5°C

Tris(hydroxymethyl)aminomethane
$(CH_2OH)_3CNH_2$
Boiling Pt. at 10 mm..... 219-220°C
Melting Pt..... 171-172°C

N-Methylglucamine
$CH_3{\cdot}NH{\cdot}CH_2(CHOH)_4{\cdot}CH_2OH$

This is a polyhydroxyamine with properties that suggest application in the synthesis of surface-active agents, pharmaceuticals, dyeing assistants and other fields. It undergoes many reactions typical of secondary amines. It is soluble in water, and pH of a 1% aqueous solution at 25°C is 10.5.

Melting Pt..... 128-129°C

CSC AMIDES

Dimethylformamide $H{\cdot}CO{\cdot}N(CH_3)_2$

A powerful solvent for a wide variety of materials including nitrocellulose, cellulose acetate, cellulose triacetate and vinylite resins. It exhibits selective solvent properties—its low volatility and stability to heat facilitate easy, low-loss recovery. It possesses outstanding solvent properties for many common gases.

Sp. Gr. at 25/4°C 0.9445
Boiling Pt. at 760 mm ..... 153°C
Melting Pt..... –61.0°C

CSC CHLORONITRO-PARAFFINS

This versatile group comprises stable liquids miscible with most organic solvents, including the lower alcohols, glycols, esters, ethers, petroleum hydrocarbons, mineral oils, and vegetable oils. The chloronitroparaffins are excellent as solvents for fats and waxes and as anti-gelling agents in certain types of rubber cement.

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Here are 22 CSC new-horizon chemicals which might help improve your products or processes and your market opportunities. They bear evaluating. Our Market Development team is prepared to work with you in developing these for your profitable use. Write today on company letterhead for technical data sheets and samples.

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One of this group 1,1-dichloro-1-nitroethane is a powerful fumigant for insect pests attacking stored fur, tobacco, and a variety of foodstuffs.

1-Chloro-1-nitropropane $CH_3CH_2CHClNO_2$
Sp. Gr. at 20/20°C 1.209
Distillation Range (90%)..... 139.5-143.3°C

2-Chloro-2-nitropropane $CH_3CClNO_2CH_3$
Sp. Gr. at 20/20°C 1.193
Distillation Range (90%) 129.0-132.3

1,1-Dichloro-1-nitroethane $CH_3CCl_2NO_2$
Sp. Gr. at 20/20°C 1.405
Distillation Range (90%)..... 122.0-125.0°C

1,1-Dichloro-1-nitropropane
$CH_3CH_2CCl_2NO_2$
Sp. Gr. at 20/20°C 1.314
Distillation Range (90%)..... 141.0-143.6°C

CSC NITROHYDROXY COMPOUNDS

Of particular interest in chemical synthesis. One compound of this group has shown usefulness as a heat sensitizer for rubber latex; another as a high-boiling solvent for zein, cellulose acetate, and oil soluble dyes. They are also useful as mild oxidizing agents.

2-Nitro-1-butanol $CH_3CH_2CHNO_2CH_2OH$
Boiling Pt. at 10 mm ..... 105°C
Melting Pt..... –47 to –48°C

2-Nitro-2-ethyl-1, 3-propanediol
$CH_2OHC(C_2H_5)NO_2CH_2OH$
Melting Pt..... 56-57°C

2-Nitro-2-methyl-1, 3-propanediol
$CH_2OHC(CH_3)NO_2CH_2OH$
Melting Pt..... 147-149°C

2-Nitro-2-methyl-1-propanol
$CH_3C(CH_3)NO_2CH_2OH$
Melting Pt..... 90-91°C

Tris(hydroxymethyl)nitromethane
$(CH_2OH)_3CNO_2$
Melting Pt..... 165-170°C

CSC POLYSACCHARIDES

Native Dextran 1,6' α-pyranose polymer

Native dextran is currently being evaluated in the fields of food, cosmetics, paper, pharmaceuticals, textiles, and printing. In these applications, it is being tested as a thickening agent to increase viscosity and to aid in suspension of solids.

CSC SURFACE-ACTIVE AGENTS

Alkaterge®-A, Alkaterge®-E, Alkaterge®-T

This group comprises three new substituted oxazolines. They are cationic, oil-soluble surface-active agents similar in structure and properties to the established surface-active agent, Alkaterge-C. The new products should prove valuable as auxiliary emulsification agents, spreading agents, pigment-grinding assistants, defoaming agents and dispersing agents.

Glucaterges®

These additions to the class of non-ionic surface-active agents are prepared from fatty acids and a polyhydroxy amine. They exhibit a unique combination of properties which suggests new possibilities for ideal performance characteristics under a wide range of conditions.

The outstanding foaming properties, excellent detergency, and good "feel" of Glucaterge-12 suggest applications in hair shampoos, shaving creams, and other cosmetic products. Also, this product is an emulsifying agent for hydrocarbon emulsions, and a dispersing agent for carnauba wax. Tests indicate its usefulness as a wool detergent.

Low-foaming detergent Glucaterge-28 possesses characteristics that recommend its use for mechanical dish-washing compounds and other applications where low-foaming properties combined with strong detergency are desirable. It is a useful component of soap products for hard-water areas, and can also be used to advantage in formulating specialty cleaners such as used on woodwork, walls, glass and tile.

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This photomicrograph at 15× shows DPi Type 6-100 *d*-alpha-Tocopheryl Acetate crystallized from a solvent. At room temperature it is a light yellow oil (Gardner color index 6 or less).

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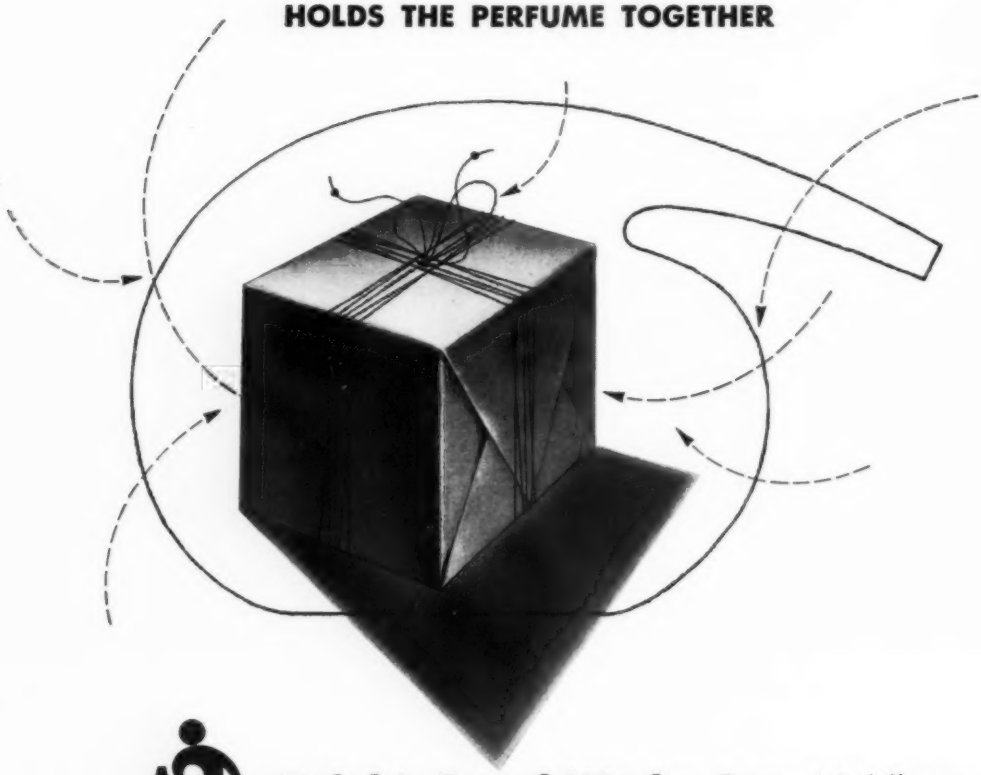

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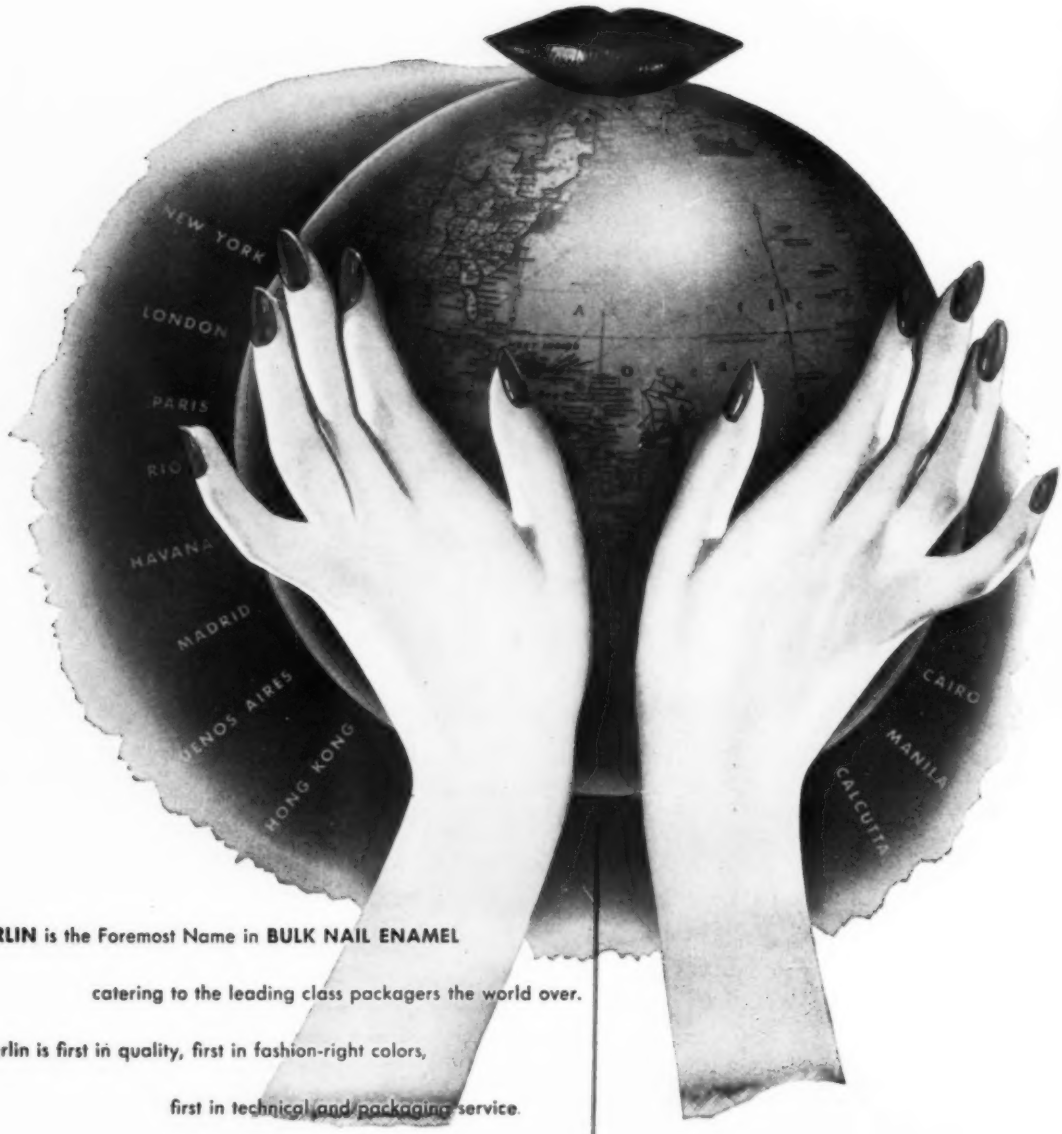

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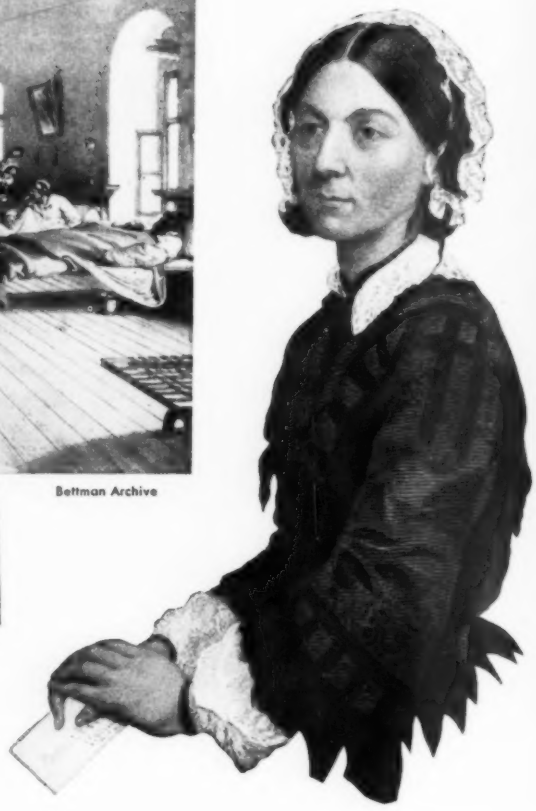
REPUTATION



FLORENCE NIGHTINGALE (1820–1910), noted English society woman, reformed hospital practice and founded England's nursing system. Illustration shows her supervising a hospital during the Crimean War where she cut hospital deaths from 42% to 2% in six months time.

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U. S. P.

Made to highest standards, Columbia-Southern Sodium Bicarbonate meets your most precise needs for compounding or repackaging. It is noted for its purity, whiteness and uniform screen size. Produced in powdered or granular form. Specify Columbia-Southern Bicarbonate U.S.P. . . . known by reputation.

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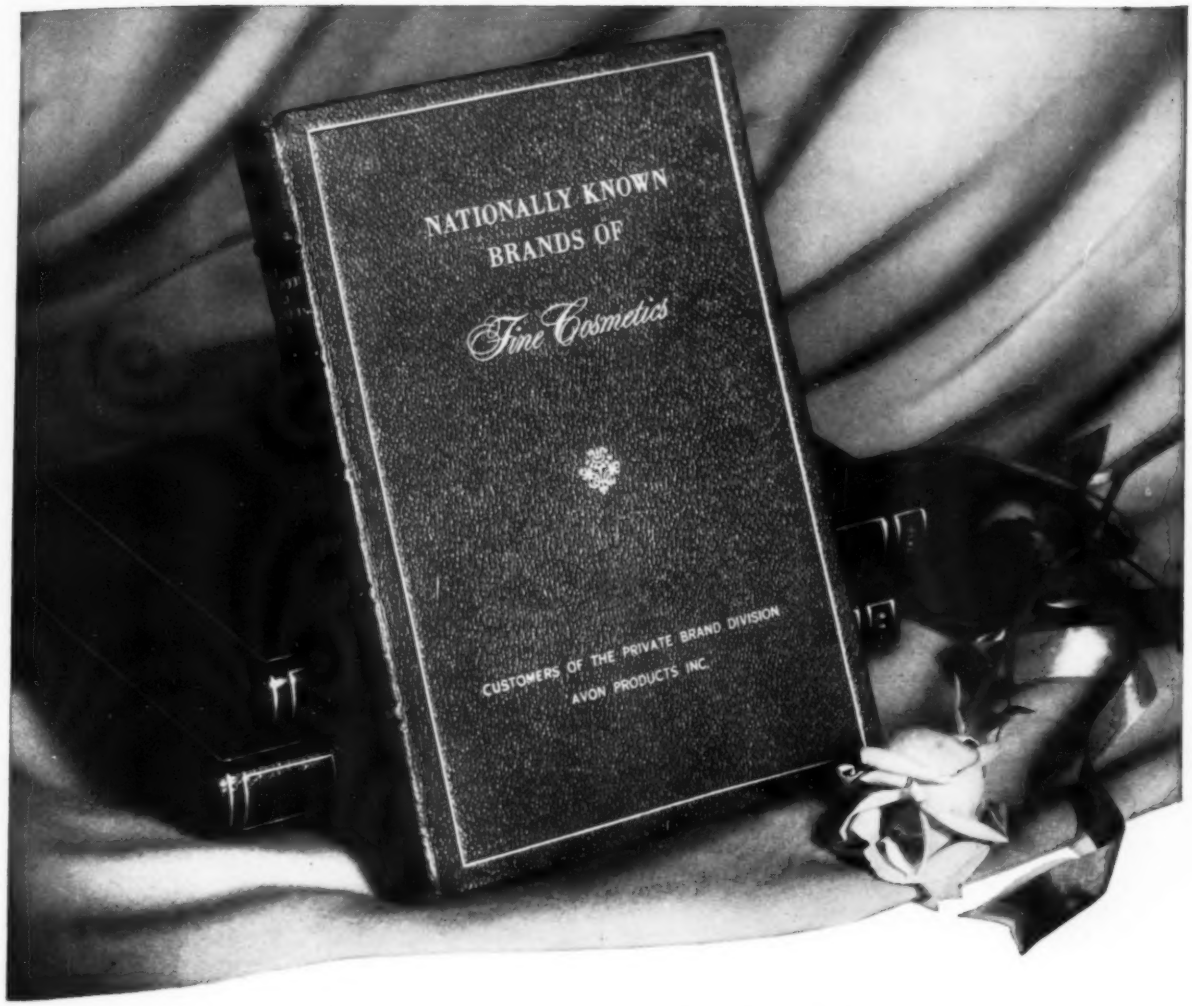

It pays to go by the book!

Naturally, this book is a "closed" one. Names of the brands of fine cosmetics and toiletries made by the Private Brand Division of Avon Products are held in strict confidence.

But, we *can* say they're names of great renown . . . and their example is worth remembering.

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Avon's position of leadership has been gained by the most faithful observance of the highest quality standards. Your products are assured the expert attention which distinguishes Avon's production of its own and other well-established private brands. Formula and product assistance of Avon specialists is available if you desire. Their knowledge and experience include every phase of cosmetics and toiletries production.

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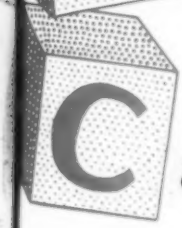
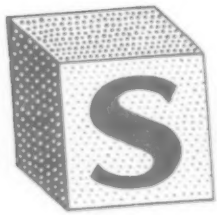
Now Is The Time To Think of Your

Absorption

Bases in



Care of



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oral grade

• With the new Pfizer Oral Grade Concentrate you'll be able to formulate superior Vitamin B_{12} tablets more easily. This new form of B_{12} offers:

1. Uniformity of Color. A consistent pink color makes it possible to tablet B_{12} products with the characteristic color your customers look for.

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3. New Diluent. Anhydrous Dicalcium Phosphate contains less moisture than former diluents and has better tabletting characteristics.

4. Extremely Fine Particle Size. The new product gives a smoother appearing final product. Particles of B_{12} are more evenly distributed throughout the tablet.

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Other forms of B_{12} available from Pfizer:

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VITAMIN B_{12} CRYSTALLINE 0.1% TRITURATION WITH DICALCIUM PHOSPHATE OR MANNITOL

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The master perfume chemists of van Ameringen-Haebler, Inc. know markets, perfumes and the technical arts of perfumery. Their guidance can help you design your next fragrance success.

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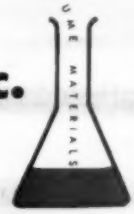

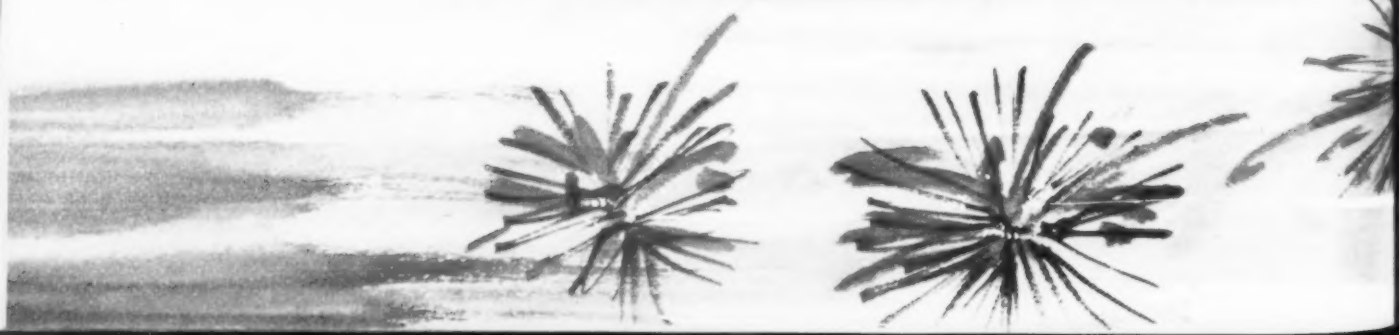

Nobody knows...

...as well as the pharmaceutical manufacturer how many complications can arise in making simple tablets on a production basis. It requires skill, equipment—and perhaps most of all, properly prepared starting materials. Mallinckrodt, after eighty-six years of growing with the nation's pharmaceutical manufacturers, has developed skills of its own in producing starting materials and intermediates that help pharmaceutical manufacturers reduce their problems. Refinements are continually being made to help the pharmaceutical manufacturer do his job easier and better—not only in dependably pure chemicals but in dependable forms and grades as well. Mallinckrodt may have much to offer you. Write us if your production problem involves purity or physical form.

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when using fine chemicals... to be sure ✓ *check the source*

"He's vice-president in charge of free goods."

The Druggist's Prospects

The druggist in this country seeks to maintain his position as a professional man primarily by seeking to prevent other merchants from selling at retail commonly used and harmless drug preparations. In addition he seeks to maintain his profit position by fighting for continuance of price maintenance legislation, and by merchandising through his store all manner of goods not even remotely related to pharmacy or medicine. The so-called soda fountain, which is now in truth a lunch counter, occupies a major part of a very large number of the drug stores of the country. The terms, store traffic, impulse buying, and many others which are part of the jargon of merchandising experts, are back of this merchandising through drug stores of these unrelated things.

It would seem that the proper road for pharmacists to pursue would be to seek to merchandise through their stores more types of merchandise of which their professional training would give them greater knowledge than would be possessed by retailers not so trained. For this reason we have suggested that pharmacists should become the leaders in the merchandising of veterinary products and dietary foods. Certainly the pharmacist should be far more qualified to dispense veterinary preparations than the average pet shop. And certainly there is no reason why the veterinary physician should handle the sale of these preparations as some veterinary manufacturers seem to believe.

We note with interest that the pharmacists of West France (Brittany, Normandy, Anjou) have solidified in a propaganda drive for development of two new fields of activity of interest chiefly to the country pharmacist: veterinary pharmacy and phytopharmacy. The difficulty with the sale of veterinary preparations through the pharmacists of these areas has been that the dispensing of these drugs by veterinary physicians has reduced the business done by pharmacists to almost zero. However, the pharmacists are driving hard to force the great pharmaceutical specialty laboratories to change their policies which have reserved their products to veterinary physicians entirely to the exclusion of the pharmacist. Under pressure of the movement, several laboratories have consented to review their positions in order to remove the obstacles they have put on freedom of trade and supply pharmacies with their products from now on.

Phytopharmacy, or the business of preparations for control of insects and parasites which attack agricultural growths, can be carried on by anyone wishing to carry these products, even the most dangerous poisons. The proper use of these products is of extreme importance to growers, sellers, and consumers of agricultural products, and in view of the dangerous nature of many of these preparations, it is being stressed by the pharmacists that they should be the ones to handle them.

These activities to increase the business of pharmacies are of the type of activity which recognizes the professional training of the pharmacist. The pharmacist is on solid ground when he seeks to bring about changes in distribution which changes will result in greater benefit not only to the manufacturers of these products, but to the users of them as well. Rather than fight to maintain a status quo in a changing world by trying to prevent others from selling harmless drugs, or to prevent others from passing on the savings of efficient merchandising, these pharmacists should seek to render a service based on their training. And they can best render this service by seeking to promote the sale of those products which are better and more safely distributed by professional men.

Cosmetic Auction Sale

The assets of the International Research Laboratories, Inc., manufacturers of Empress Josephine cosmetics, located at Palm Beach, Florida, were auctioned last month as the result of a bankruptcy proceeding. The items included in the sale of this company are interesting. Among them were:

One hundred thousand pounds of glycerine, 50,000 pounds of triethanolamine, 200 drums of assorted chemicals such as cholesterol, Lanamine, polyethylene glycol monostearate, isopropyl alcohol, and another 100,000 pounds of chemicals "too numerous to mention."

"Tremendous quantity of imported essential oils, aromatics, perfume bases, 10,000 pounds cosmetic grade waxes. Complete and modern laboratory valued at $20,000, trade name 'Empress Josephine' with hundreds of thousands of labels, including $10,000 worth of stationery.

"Three thousand dozen finished 'Empress Josephine' creams and lotions. 10,000 gross bottles. 500,000 gold

plated bottle and jar caps and lipstick containers. 50,000 corrugated cartons."

Also included in the sale was the following machinery: 250 to 2,000 gallon steam jacketed stainless steel tanks with agitators, 15 H.P. Cherry Burrell Viscolizer, large filter, 19 B.B. Waukesha stainless steel sanitary pumps with motors, all sizes; 35 Master Gear motors in all sizes, 2,000 feet of automatic conveyor system, 5,000 feet of stainless steel piping in all sizes with fittings and valves, 1,000 feet monel link-belting, notorized labeling machines, Lightning portable agitators, glass lined tanks, Toledo scales, Clark fork lift truck, Cutler Hammer control switches, Minneapolis Honeywell remote controls, auxiliary switches, International centrifuge, jar-filling machines, automatic bottle filler with 6 spouts, bottle capping machinery, 60 qt. Blakeslee mixer, lipstick molds, Burnham oil burner, water coolers, refrigeration compressors and coils.

T. G. A. Restricts Attendance

The Toilet Goods Association, by unanimous vote of its Board of Directors, has restricted attendance at its annual conventions to representatives of its member companies. Members, both Active and Associate, may invite guests to attend the convention provided those guests are not eligible for membership in the Association. Representatives of companies which are eligible for either Active or Associate membership may attend the convention as guests of Active members only, and then only after attendance has received prior approval of the Executive Vice-President of the Association.

It will be recalled that last year the Association restricted the attendance by suppliers to those who are Associate members, but attendance by manufacturers of finished cosmetics and perfumes was left open. Now this too has been restricted.

In restricting attendance only of those who are eligible for membership in the Association, the door has been left open for attendance by representatives of retail establishments, the government, educators, dermatologists and other persons.

"Non-Poisonous" Redefined

The Proprietary Association has obtained a modification in the definition of "non-poisonous" in the opinion of the Court in the New Jersey Declaratory Judgments case. Immediately following the receipt of the opinion, and before the Judgment became final, the Attorney and Secretary of the New Jersey Board of Pharmacy and also the Secretary of the New Jersey Pharmaceutical Association, indicated through releases that in their opinion they could, under the definition of "non-poisonous" as contained in the opinion, restrict the sale of practically all, if not all, medicines intended for internal use to sale in drug stores.

Since the Proprietary Association did not agree with this interpretation, the Court was asked to modify the definition so as to clarify what might result in a misunderstanding, and additional court action. The proposal was argued before the Court on September 18, and the Court has modified the definition of "non-poisonous" so that it now reads:

"2. That the word 'non-poisonous' as used in R.S. 45:29 relates to the words 'patent or proprietary medicines', in said section, and, in relation therewith, is declared to mean a 'patent or proprietary medicine' that when bearing or accompanied by proper printed directions for use thereof, and when used in accordance therewith, and being in solution in the blood or acting chemically on the blood, neither destroys life nor impairs seriously the functions of one or more of the organs."

Deafness Claims Banned

In an initial decision by Federal Trade Commission Hearing Examiner Abner E. Lipscomb issued against Unitone Corporation, New York, certain representations of a vitamin-mineral preparation called B-Amino-Complex or BAC are prohibited.

Claims to be stopped are that the product will check or cure deafness or have any significant effect upon deafness, except in cases of perceptive deafness where failure of the auditory nerve has resulted from a high blood-content of pyruvic acid, caused by disturbance of the carbohydrate metabolism of the body.

Avon Shows Further Gain

Still leading the pack so far as volume of sales of companies manufacturing and selling cosmetics exclusively, Avon Products recorded a 19.2 increase in sales for the first six months of this year. The actual figures reported are $20,053,477 for the first six months of 1953, against $16,815,980 for the first six months of 1952. If this percentage increase in sales follows through for the second half of this year, Avon should record for this year a total sales volume of $48,630,516, compared with $40,797,413 for the year 1952. The 1952 sales volume registered a 13 per cent gain over the 1951 volume which stood at $35,826,501.

This company is recording sales gains at a much greater rate than the industry itself. In 1952 it established a gain of 13 per cent against a gain of five or six per cent for the industry. And this year is gaining at a 19 per cent rate against a gain for the industry which will not be greater than five per cent, if it is that high.

Pharmaceutical Research

Simultaneous research discoveries in the pharmaceutical industry are becoming increasingly frequent, Pfizer President John E. McKeen told the American Chemical Society in opening discussions on the drug industry's marketing problems at the recent Chicago meeting of the Society.

"The productivity of the industry's research makes it increasingly important to establish a new product's brand position quickly," said Mr. McKeen. "The cost of such action is high . . . and blunders are incredibly costly. . . . The therapeutic usefulness of a product type will be the ultimate determinant of its market success, but it will not determine whether the brand of one company or another is to enjoy this success."

As to the types of new products that may be expected

to appear in the future, Mr. McKeen predicted that there certainly will be radically new synthetic chemical substances, also new antibiotics can be anticipated, while steroid hormones and vitamins will continue to grow in importance in the treatment of degenerative diseases.

Dolcin Stops Infringers

Dolcin Corporation announced last month that "four additional imitators have acknowledged the validity of Dolcin Corporation's patents covering succinate-salicylates and agreed to cease and desist from making or selling their imitations of Dolcin." The products and the makers or distributors are: Salnate (Manhattan Drug Co., New York), Artume (Freeman Drug Products, New York), Kentex (Kinfort Proprietary Ltd., Australia), Amerpol (Amerpol Associates, Chicago). These are in addition to twelve others who have given up in the past year: Arthricin, Arthritab, Cinosal, Covin, Imdrin, Klev, Sal Sperin Bell, Salbex, Salent, Salvit, Suprin-C, and Suxosal.

F.T.C. Changes "Free" Policy

Last month the Federal Trade Commission reversed its previous ruling regarding use of the word "free" in describing merchandise given without additional charge when a person purchases other merchandise. Since January 1948 a policy of the Commission had prohibited use of the word "free" as a descriptive term for any merchandise to which any strings were attached. Under this former policy, merchandise, to be called "free", had to be "in truth and in fact a gift or a gratuity." That is, it had to be given without requiring the purchase of other merchandise or the performance of any service inuring directly or indirectly to the benefit of the advertiser or seller.

However, under this new ruling in which it rescinded its administrative interpretation restricting use of the word "free" as published in the Federal Register of January 30, 1948, the Commission warns that the term must be used "honestly" and not as a "device for deceiving the public."

The Antibiotic Industry

The U. S. Antibiotic industry during 1952 produced 1,320 pounds with a sales value of $150 million at estimated bulk powder prices, according to Dr. Robert D. Coghill, Abbott Laboratories Director of Research. Penicillin production calculated as the sodium salt approximated 462,000 pounds in 1952, he said, streptomycin and dihydrostreptomycin together totaled about 400,000 pounds, and the three broad spectrum antibiotics probably accounted for another 400,000 pounds. Erythromycin, fumagillin, tyrothricin, bacitracin, neomycin and polymixin are being produced on a much smaller scale. Said Dr. Coghill:

"It is interesting to compare this volume of U. S. antibiotic production, about 1,320,000 pounds, with that of other drugs. In 1951, the United States produced 550,000 pounds of sulfur drugs, 1,342,000 pounds of aspirin, and 79,200 pounds of barbiturates.

"The total bulk sales value of U. S. antibiotic production in 1952 was in the neighborhood of $150 million. This figure does not represent the total amount the antibiotic industry received because most of this material was compounded into dosage forms which incorporate much in the way of service and skill. A conservative figure for the capital investment in the whole U. S. antibiotic industry is about $200 million."

Anti-Enzyme Dentifrices

There seem to be some marked differences between the introduction of the anti-enzyme dentifrices and the introduction of the ammoniated dentifrices a few years ago. In the first place the ammoniated products were first introduced as powders, since no one could formulate a satisfactory tooth paste at the outset. But the main difference is that the anti-enzyme products are being introduced by well-known and well-established makers of dentifrices. No one appears likely to slip into the dentifrice market this time the way the Block Drug Company did with Amm-i-dent.

Another difference is that opposition to the claims being made for the anti-enzyme products has come much sooner from professional circles than in the case of the ammoniated products, and also this opposition appears to be much stronger in tone. Also, it appears to us, although we might be mistaken, that there exists a noticeable apathy on the part of the public to this latest "wonderful discovery" in dentifrices. We imagine that these "final answers" to mouth troubles have been following too closely upon one another's heels.

Clinical Research Requirements

"The qualifications for men who occupy posts in clinical research in the pharmaceutical industry are: a doctor's degree in medicine; internship and residency; clinical experience; research training, preclinical or clinical; a high standard of scientific ethics; an imaginative concept of drug therapy; ability to write and to speak; liking for people and travel; and willingness to consider the opinions of others." Dr. Elmer L. Sevringhaus, director of clinical research for Hoffmann-La Roche, set down these qualifications in his paper, Interdependence of the Medical Profession and the Pharmaceutical Industry, given before this year's meeting of the American Medical Association. Dr. Sevringhaus also stated:

"The last two decades have seen the development of at least two specialized services by physicians that are indispensable to the manufacturer of pharmaceuticals. The pharmacologist must determine the characteristics of biological activity of new compounds, including toxicity and undesirable actions. Without the use of laboratory animal testing the pharmaceutical industry would be impotent. This type of study, beginning with mice and rats, is never complete until human pharmacology is included. This latter step provides the first of the opportunities for the staff in clinical investigation. These physicians occasionally have hospital staff positions that enable them to make clinical observations at first hand. More often they establish arrangements for studies of new compounds with experienced

physicians who have no direct connection with the pharmaceutical firm. . . .

"The intense competition among pharmaceutical manufacturers makes it certain that ultimately only the superior products will be prescribed by physicians. But much time and valuable advantage to health may be lost if use in practical therapy must achieve these ends. Consequently there is rapidly growing emphasis on objective means for diagnosis and on estimation of improvement. Since both of these methods are often difficult to carry out in clinical medicine, two other devices are invoked: statistical treatment of data from observations on many patients who receive a new drug and the "blind test." This latter means that neither physician nor patient knows when the drug in question is being given or when an accepted drug or an inactive tablet has been substituted for comparison. It is obvious that sale and competent planning for such clinical research is of vital importance both to manufacturers and physicians.

FTC Can Sue Anyone

Federal Trade Commissioner Lowell Mason told the Federal Wholesale Druggists Association that the FTC operates under powers so broad that it could sue virtually every company represented in his audience because of the discounts they offer, since the Commission could interpret the law to make any discount an illegal one. Commissioner Mason said that wholesalers are particularly vulnerable because they can be hit in two ways by the antitrust laws: they could be sued if they sell at a discount not approved by the FTC, and they could be sued if they buy at a discount not favored by the Commission.

Advertisement Established Label Claims

Advertising a medicinal preparation for a use not mentioned in the labeling constitutes misbranding because the label fails to carry adequate directions for use. This was the decision of Federal District Judge Robert C. Bell, in Minneapolis upholding a seizure by the Food and Drug Administration of a shipment of Tryptacin, an antacid product of the Rhodes Pharmacal Co., Cleveland.

According to FDA testimony, Tryptacin contains aluminum gel, magnesium trisilicate, magnesium oxide, and other ingredients. However, in a newspaper advertisement it was stated that "new Tryptacin relieves acid pains of diagnosed stomach ulcers, acid indigestion, gas, after eating distress," among other things. The words "acid pains" and "stomach ulcers" were in large type. FDA claimed that this represented a claim for the product as therapeutically effective for stomach ulcers. Rhodes maintained that the product was only being offered as an antacid and that label directions were adequate. The product was labeled for use "for symptoms of excess gastric acidity."

Judge Bell said it was clear to him that the product was offered in the advertisement as something more than an antacid or a palliative for acid pain. The Judge also referred to a statement in the advertisement that clinical tests showed ulcer patients who had been treated with Tryptacin had shown "almost complete healing." This language, said the Judge, "can have been put into the advertisement for no other purpose than to cause the sufferer from stomach ulcers to believe that the drug would give more than relief from pain of stomach ulcers and that it will in fact, provide a cure."

"I can see no reason for placing any language at all dealing with the healing of stomach ulcers in the advertisement if Tryptacin is offered only as a palliative for the relief of acid pain," said the Court.

Parke, Davis Facts

"In 1902, Parke, Davis opened the first laboratory devoted exclusively to research to be built in the U.S. by a commercial organization," says the September Fortune in an article entitled Shock Treatment for Parke, Davis. Stating that this resulted in Parke, Davis contributing "more than a fair share of pharmaceutical firsts," it adds:

"In the field of glandular therapy, for instance, Parke, Davis produced the first heart stimulant, Adrenalin; Pituitrin, for use in childbirth; Theelin, the first female sex hormone. Superseding the famous '606' and its derivatives, P.D.'s Mapharsen was the 'drug of choice' in syphilis treatment for ten years, until Mapharsen, was made obsolete by penicillin. With Dilantin, P.D. offered the first control of 'grand mal' epilepsy. Promin, by Parke, Davis, was the first effective treatment for leprosy. In 1946, Parke, Davis, ushered in a new concept of allergy treatment with Benadryl, the first of the antihistamines."

As to Parke, Davis's position in the industry, Fortune says:

"In 1918 P.D.'s sales were $23 million; in 1929 they were only $4 million higher. Meanwhile, smaller houses such as Upjohn and Abbott were forging ahead at Parke, Davis' expense. In the next two decades P.D.'s sales tripled. But the gain was fractional in comparison to that of competitors. During this period Lilly's business increased nine times, Abbott's eighteen times, and Squibb's ethical sales more than twenty-five times."

Stating that the early demand for Chloromycetin became so great that P.D. had to "turn to Pfizer for supplementary production," and that "Monsanto helped out later with synthetic production of the drug, Fortune says: "In a little more than three years Chloromycetin sales totaled $120 million (in 1951 alone they were over $50 million), and the profit on them must have been at least $30 million."

As to present conditions in this drug, Fortune says: "The company's new $3,500,000 plant at Holland, Michigan, bought as a place to make Chloromomycetin, has been virtually idle. From the way things are going, present stocks of the drug will suffice for many weary months to come."

In addition to this information regarding Chloromycetin, the article says that about 35 per cent of P.D.'s foreign sales are in Chloromycetin, and that comes to something like $16 million.

Stating that the P.D. line once consisted of as many as 2,000 items, and that 85 per cent of total profits are turned in by about 100 specialty items, Fortune says that last year about 200 items were dropped and today the line consists of about 660 products.

The company's domestic detail staff has been increased from 500 to 750, and an intensified training program for salesmen will stress the need to promote the entire line of specialties rather than to concentrate on one or two items.

Squibb Building Sold

E. R. Squibb & Sons Division Mathieson Chemical Corporation has divested itself of its 90 per cent interest in the Squibb Building to the Alglan Realty Corporation, Rostev Realty Corporation, and Arngrant Corporation. Squibb has taken a long time lease on the space which it has occupied in this building at Fifth Ave. and 58th St., New York. The building will continue to be known as the Squibb Building.

Mathieson President Thomas S. Nichols explains that the sale of this interest is in line with Mathieson's policy of consolidating its resources in activities more closely related to the chemical and pharmaceutical businesses and limiting its holdings of general commercial properties.

Bristol Penicillin Patent Upheld

Bristol Laboratories patent covering procaine penicillin suspended in a vegetable oil gelled with two per cent aluminum monostearate, has been upheld by Judge William E. Steckler of the U. S. District Court for the Southern District of Indiana. The case involved infringement of the patent by Schenley Laboratories and was argued before Judge Steckler in August 1952. Bristol Laboratories says that the product is licensed "to most of the producers of penicillin in the United States and in foreign countries and is used throughout the world. It is the product of choice for the mass treatment of venereal diseases."

Owens-Illinois Invests in Plax

Owens-Illinois Glass Company has invested $8 million in Plax Corporation, previously a wholly owned subsidiary of Emhart Mfg. Co. Newly issued Plax stock sold to Owens-Illinois is equal in amount to the Plax stock owned by Emhart so that the interests of Owens-Illinois and Emhart in Plax are equal. It is anticipated that a small amount of additional Plax stock will be issued to one or more members of the Plax management. Emhart has not sold any of its Plax stock, all money from the sale going to Plax.

The transaction, which was impending since last June, followed a favorable decision on September 15 by the U. S. District Court in Toledo on a petition by Owens-Illinois.

Plax officials point to the Owens-Illinois investment as a reflection of "confidence on the part of Owens-Illinois in the long range potentialities of Plax," and state that "the arrangement just concluded will provide Plax with adequate working capital, thereby enabling Plax to maintain a competitive position with substantial concerns which are becoming increasingly active in the plastics business."

Plax manufactures sheet, rod, tubing, squeeze bottles and film from various plastic materials. It is expected to continue under present management.

A. Ph. A. Prescription Service

The American Pharmaceutical Association is to organize and develop a Division of Prescription Practice at its headquarters building in Washington to carry on the ever-increasing volume of work in this field and to initiate studies which will provide the best factual data on which practicing pharmacists may base plans for the development of this phase of their activity.

Antitrust Law Committee

Attorney General Brownell has established a National Committee to Study the Antitrust Laws. The committee consists of two co-chairmen and 56 other members. Charles Wesley Dunn, General Counsel of the American Pharmaceutical Manufacturers Association, was appointed a member of the committee because of position as Chairman of the Section on Antitrust Law of the New York Bar Association.

Fair Trade Forum

The American Fair Trade Council will hold its Annual Open Forum Meeting on November 17, at Hotel Roosevelt, New York. According to Council President John W. Anderson, "An imposing panel of eight Fair Trade authorities, including jurists, lawyers, economists, and merchandisers have accepted the Council's invitation to discuss, at the meeting . . . vital Fair Trade problems."

Larger U. S. P.

U.S.P. XV, to make its appearance late in 1954, will be approximately fifteen per cent larger than the current volume issued in 1950, Dr. Lloyd C. Miller, director of revision, told the American Pharmaceutical Association annual meeting.

Several new features will be included in the forthcoming volume such as added information on dosage of drugs, and a short statement on the action of the medication will complete the information on dosage. Also to be added are methods of analysis chosen for standardizing some of the newer as well as older drugs, and more use will be made of newer techniques of standardization, such as instrumental analysis, chromatography, and non-aqueous titrations.

Although the list has not as yet been frozen, present admissions plans are for 862 new monographs representing about 431 new individual drugs. This represents an increase of about 100 monographs compared with U.S.P. XIV. Also, 147 items are being deleted as it is felt that they no longer represent the best practice of medicine and pharmacy. There are five antibiotics included in the admissions, namely, bacitracin, erythromycin, neomycin, oxytetracyline (Terramycin), and polymixin. The antihistaminics constitute the largest single group in the admissions with 11.

Marketing Antibiotics

by Edward J. Goett

DIRECTOR, SALES DEVELOPMENT DIVISION
CHAS. PFIZER & CO., INC.

During April, 1953, 44.4 million prescriptions were filled by drug stores in this country; of this total, 5.9 million, or 13.5 per cent, were for antibiotics. And because antibiotics as a whole are still relatively more expensive than such product groups as the analgesics or vitamins, they accounted for 22.3 per cent of the aggregate dollar volume, at manufacturers' prices, of these prescription sales. Both in terms of prescription frequency and dollar volume, the antibiotics are the most important single pharmaceutical product group marketed in drug stores.

In terms of dollar volume, antibiotics are also the most important product group purchased by both private and government hospitals. During April they accounted for 27.8 per cent of the value of private hospitals' purchases and 31.0 per cent of those of city, county, state and federal hospitals.

They are also, in terms of dollar volume, the most important individual group of products purchased by physicians for their own use. During April, they accounted for 40.3 per cent of the aggregate dollar volume of these purchases.

Thus the antibiotics have substantial importance in each of the major channels of distribution through which pharmaceuticals are marketed. With these statistics providing something of a frame of reference, I want now to consider several of the major types of antibiotics individually. I shall discuss, in turn, penicillin, the wide range antibiotics, and finally the antibiotics of specialized application such as streptomycin and viomycin.

Penicillin

Penicillin came into widespread civilian use in this country in 1945, and in every year since that time it has continued to be produced and consumed in increasing volume.

The chart of penicillin production, however, makes it clear that the rate at which its production is growing has dropped significantly in recent years. In fact, its present growth rate can be very well represented by a curve of the well-known Gompertz type. Such a curve, fitted to quarterly penicillin production data from January, 1944, to June, 1953, appears on another chart. Extrapolated forward, it suggests these future production totals.

Table 1
Gompertz Projection of Penicillin Production
1955 and 1960

Year	*Production*
1955	662,700 BU
1960	982,400 BU

These figures bespeak a sharply reduced rate of growth in penicillin production during the years immediately ahead. But as totals they are certainly impressive. And they suggest the heartening conclusion that—assuming the accuracy of the National Production Authority's estimates of presently available production capacity—rising consumption will have disposed of the problem of the industry's present overexpansion sometime during 1956 or 1957.

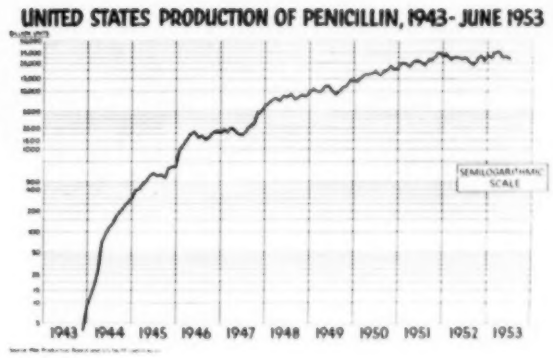
And the fact that the recorded increase in the output of penicillin in recent years is well accounted for by a growth curve of this type has other important implications. It underlines the fact that the sharp drop in penicillin prices during the last few years has been responsible for relatively little expansion in its use. In the jargon of the economists, penicillin—in common with

most other pharmaceuticals—exhibits relatively little price elasticity of demand.

This price drop, well illustrated in the chart which records the price history of a 100,000 unit vial during the period 1943 through June, 1953, has thus reduced the margins which its producers enjoy without producing any corresponding increase in their sales volume.

Several important producers have responded to this sharp decline in the profitability of their penicillin sales by developing specialty penicillin formulations which command a price premium over standard products. The most conspicuously successful such product is, of course, Wyeth's penicillin product, Bicillin. And there are a number of others.

The increase in the relative importance of these products is well illustrated by the change from June, 1949, to June, 1953, in the proportion of total Food and Drug Administration certifications which they account for. In 1949 they represented 4.3 per cent of all certifications (in billions of units); in 1953 this figure had grown to 17.8 per cent. Squibb's Pentids, which have a commanding position in the penicillin tablet market in drug stores, and the Parke, Davis SR products are examples of other penicillin products which have been successfully differentiated from very similar competitive products through the use of heavy promotion. This sort of marginal differentiation of their products is being resorted



to increasingly by penicillin manufacturers in an effort to establish their products as distinctive ones in the minds of physicians and to secure some measure of shelter from price competition for them.

In summary then, penicillin consumption will, we think, continue to rise in the years ahead, but at a rate below that of earlier years. Prices for the standard products are likely to remain at present levels; further important drops are unlikely because profit margins are already vanishingly small, and the overexpansion of the industry's productive capacity makes significant recovery unlikely unless new, non-pharmaceutical end

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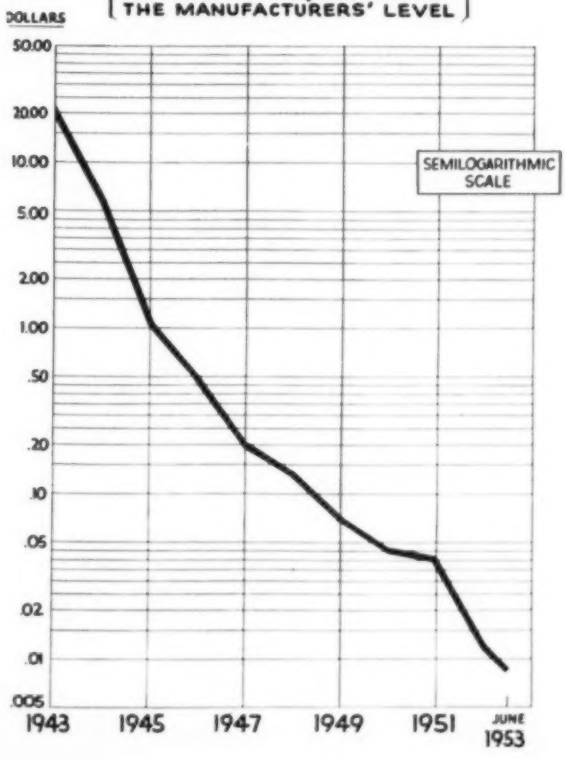

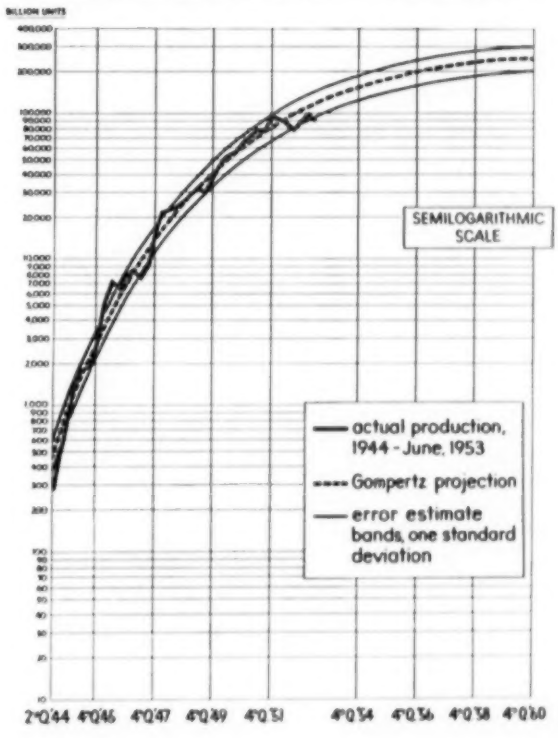

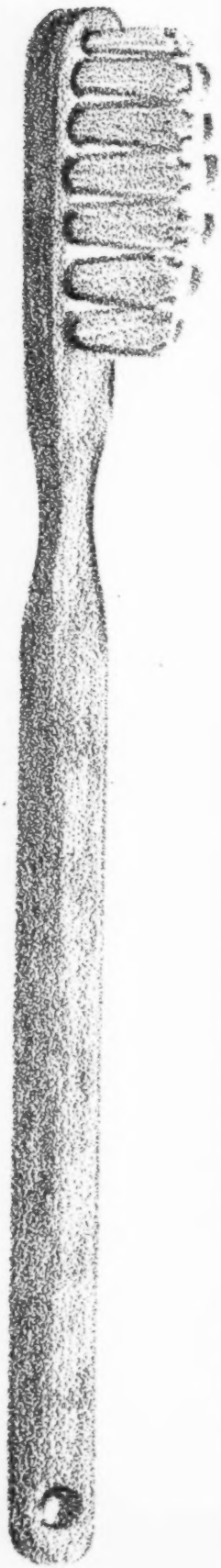

Role of Anti-Enzymes

by Milton A. Lesser

Taken by M. Martin 11/10/54

"Anti-enzyme" is a word we are going to hear and see quite frequently from now on. Obviously, its association with the new dentifrices is an important factor in this sudden popularity. Nonetheless, the word would have become important in due time because of its association with a number of new medical developments.

An appreciation of the importance of anti-enzymes or enzyme inhibitors is predicated, of course, upon the position occupied by the enzymes themselves. Enzymes play a role in essentially every known biological process,[1] and no living thing can exist without them.[2] Almost all of the reactions that occur in living organisms, whether plant or animal, are catalyzed by enzymes. Thus, as remarked by Rapp,[3] the digestion and metabolism of food, a part of respiration, the action of the sense organs, the contraction of muscles with the associated physical changes, and even the propagation of nerve impulses can all be shown to be due to enzymic reactions.

Enzymes have also been put to work. Enzyme-containing materials have been used for practical purposes for thousands of years in baking, in preparing alcoholic beverages, and in medicaments.[2] Among other industrial tasks performed by enzymes are the batting of leather to make it pliable, the ripening of butter and cheese, the clarification of fruit juices and the desizing of textiles. Enzymes obtained from fungi, yeast and molds can turn the cellulose of wood into textile materials or split fats into glycerine and fatty acids. Important industrial acids, like lactic, citric and gluconic, can be made economically by enzymatic activity on sugar.[4]

The prescribing of diastatic and proteolytic enzymes to compensate for natural deficiencies of digestive enzymes is well established medical practice.[5] Proteolytic enzymes, notably purified trypsin and streptokinase-streptodornase preparations, are finding increasing use in the debriding of necrotic wounds, burns and ulcers and to hasten healing in a variety of conditions.[6] Hyaluronidase, the so-called "spreading factor," is valued for its ability to improve the absorption and efficiency of subcutaneously administered drugs.[7] Under certain circumstances, however, it is advantageous to inhibit the action of this enzyme.

Like all catalysts, enzymes merely act to change the rate of speed of an already existing reaction. The mechanism by which they provide this effect is not fully understood but, according to Sizer[8], the evidence favors the concept that an enzyme combines with its substrate (the substances that are to undergo the chemical change) to form an intermediary compound. This in turn decomposes to release the enzyme plus reaction products. This sequence may be visualized as follows:

$$E + S \rightleftarrows ES \rightleftarrows E + RP$$

Sizer also points out that many enzyme proteins are inert unless they combine with an organic co-enzyme or a specific cation to form enzyme. By virtue of its active groups this enzyme is able to unite with appropriate groups on the substrate to form the intermediary enzyme-substrate compound. However, not all enzymes require coenzyme or metal ion for activity. In such cases, the active groups of the enzyme combine directly with the substrate.

Enzymes are extremely sensitive to environmental variables. As noted by Rapp,[3] there are several factors that affect the ability of an enzyme to influence the rate of a catalyzed reaction. Among the more important factors affecting enzyme action are: (a) the presence of water, (b) the enzyme concentration, (c) the substrate concentration, (d) the temperature of the reaction environment, (e) the pH of the solution, (f) the oxidation-reduction (redox) potential of the medium, and (g) the presence of inhibitors.

From Sizer's description, it is evident that there are a number of points in the enzyme-catalyzed reactions at which enzyme action may be interfered with or halted by enzyme inhibitors or anti-enzymes. According to this authority, the following mechanisms enter into enzyme inhibition: (a) reaction with the active groups of the protein part of the enzyme, (b) reaction with other groupings in the protein, (c) combination with the coenzyme or activating cation, (d) reaction with the enzyme-substrate complex, and (e) preventing the cell from synthesizing the specific enzyme protein (apoenzyme) or the necessary coenzyme.

Also indicative is Tauber's[2] suggestion that enzyme inhibitors may be divided into three groups, as follows: (a) substances that reduce the necessary concentrations of the coenzymes, prosthetic groups, or the metal activators, (b) substances that compete with the substrate for the enzyme, and (c) substances that destroy a necessary active group in the protein portion of the enzyme.

Anti-enzymes may act by competitive or non-competitive inhibition[8,9]. In either event, they interfere with the action of an enzyme so that it can no longer function as an effective catalyst.

Rapp speaks of non-specific and specific enzyme inhibitors. The former are those which affect several types of enzymes, while the latter confine their effects to a narrow range. Non-specific inhibitors include substances that cause an inhibitory change in either of the components of the enzyme or its substrate. For instance, salts of heavy metals will stop a reaction because of their effects on the protein components. Similar results will occur from anything which will affect the coenzyme portion. Anything that will precipitate or otherwise tie up the metal component will also render the enzyme ineffectual. A familiar example of such a reaction is the inability of the blood clotting enzymes to function when oxalate or citrate is added to make the calcium ions ineffective.

Specific inhibition is not as well known as non-specific inhibition but it is of much greater physiologic importance. Such inhibition, says Rapp, is caused by substances that may be described as structural imitators or impostor molecules as compared to the natural substrate. These molecules prevent adsorption of the enzyme on the substrate or interfere with the reaction that occurs between the substrate components. There are many such specific inhibitors. An outstanding example is sulfanilamide which apparently competes with *para*-aminobenzoic acid for the reaction spots on a particular enzyme. A large number of such inhibitors or competitors are to be found in such diversified fields as biology, medicine, pharmacology, and physiology.

Sizer[8] uses a different classification for the various types of enzyme inhibitors. His first group includes the antivitamins and antimetabolites. Antivitamins, he notes, resemble vitamins closely in structure and may interfere with the synthesis of the requisite coenzyme. In addition, antivitamins may also occasionally compete with coenzyme for the apoenzyme. Antimetabolites resemble substrate in structure and interfere with enzymes (catalases) by competing with the substrate.

The second group is described as reagents for proteins. Substances in this class, which react strongly with proteins in a non-specific way, are generally powerful enzyme inhibitors. Salts of heavy metals, such as mercury, lead and uranium, precipitate proteins and inhibit enzymes. Acid protein precipitants, like phosphotungstic, tannic and trichloracetic acids, are also effective against enzymes.

The third major class of enzyme inhibitors are the denaturing agents. According to Sizer, denaturation of the enzyme protein always results in complete loss of enzyme activity. The most common denaturing agents are heat (above 50° C.), acid (pH less than 3), alkali (pH above 9) and organic solvents such as ethyl

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COURTESY TUSSY COSMETIQUES

Face Powders

by Harry Hilfer

Face Powders are among the earliest known cosmetics and though formulations have changed through the years and adaptations made to fit current fashions, their functions still remain largely the same. They are expected after application to hide minor blemishes in the skin and at the same time to impart color tonal qualities to enhance the general facial appearance. The blemish-hiding qualities are incorporated through the use of opacifying agents while the colors are introduced by means of pigments. These primary functions should be uppermost in mind in development of a powder but in addition there should be incorporated other functions to make application easier and more esthetic. These secondary functions would include—perfumery—adhesiveness to the skin and water repellency so that perspiration would not cause the powder film to streak.

Most modern face powders consist primarily of talc which is the general vehicle to which other substances are added to impart their desired function. The concentration of the other ingredients is largely dependent

on the amount of each of the functional activities desired. The materials in general use consist of titanium and zinc oxide as opacifying agents. Zinz oxide was the more prevalent until the advent of titanium dioxide which exhibits a much greater opacity. At the present time it is used almost exclusively or in conjunction with zinc oxide as the opacifier. The concentration of these agencies vary first with the amount of masking desired and secondly with the apparent density of the powder formulation. A powder of low apparent density would necessarily have a larger concentration of the opacifiers included to produce the same masking effect as one of higher density since on application the same quantity of the covering agencies must be present per unit area.

Control of ultimate opacification is therefore intimately associated with the factors which govern the ultimate apparent density imparted to the preparation. This is due to the method of powder transference to the face by means of a puff. The amount picked up by the puff is usually the same volumetrically—with different densities. This quantity would therefore vary with its density and the actual amount by weight of apacifier would therefore vary. The principal variable in control of apparent density is the formula itself—varying with the concentrations of the ingredients used—and secondly with the particle size of the powder.

The most desirable powders consist of particles of small micron size. This does not necessarily mean that the smaller the particle size the better since the ability of the powder to reflect light will diminish if the particle size becomes too small. Workers differ in their opinion as to what constitutes a proper particle size—but it is somewhere in the range 1-10 microns. As the particle size decreases the greater in the surface area of the sum total of the particles which constitute the film and within the lower limits the greater would be the light reflectance. It is reasonable to expect therefore that 0.1 gm. of titanium dioxide of one micro particle size distributed over a unit area would reflect more light and therefore appear more opaque than the same weight of titanium dioxide of 50 micron size. The concentration of opacifier would therefore be dependent on the particle size. In addition there is the added fact that the smaller the particle size the greater would be the apparent density, since the amount of air spaces between particles would be smaller with smaller particles.

The second variable to be considered in the control of apparent density are the other materials being used in the formulation. Kaolin is in general use because it is capable of imparting greater adherency and because it has a relatively high density. It is used as a control on the bulking properties of the powder and further is capable of introducing a matte effect to a greater degree than is possible with talc. Kaolin in addition may also be used to lower the "shine" of the face if its removal is desirable. Too large a concentration however may cause the powder to cake because of its greater ability to be wetted by water or perspiration.

Zinc stearate, on the other hand, is an excellent water repellent and a sufficiently high concentration would keep the film dry. Zinc stearate is an excellent agent for imparting adherence to the powder and since it is so light to lower its apparent specific gravity. Concentrations of zinc stearates and in many cases magnesium stearates in face powder run about the five per cent level but are used in concentrations as high as 10 per cent.

Light and medium precipitated chalks are also in common use. They are excellent media for permitting the powder to be free flowing since they are capable of considerable water absorption before caking begins to take place. Magnesium carborate is an old standby—used to absorb the essential oils before incorporation into the powder.

Other substances are also used in powders but those named above are the principal ones. At one time rice starch was the principal ingredient in face powders and is still considered by many to be the best. Indeed, it is still in use in some preparations. However, it fell into disfavor because of either imagined or real allergic reactions on some women. Barium sulfate was also used as a means of increasing the specific gravity and as an opacifying agent. This too has fallen into disfavor and few manufacturers use it.

Perhaps the most important function of the face powder is the imparting of color tones to the face. In a broad general way powders are supposed to compensate for the skin tones normally missing in the skin. A woman who is unusually pale would therefore use a powder providing both red and flesh tones, while a woman with a sallow complexion would probably want some red tones added. Deeper shades are used by women tanned during the summer, since the normal lighter tones would tend the film to look white against the darker background of the skin tones.

The most stable pigments are the inorganic pigments which consist essentially of iron oxide in varying degrees of hydration. They are capable of retaining their color after long shelf life and are therefore in fairly common use. In this classification are the ochers, the siennas and the umbers. Ultramarine blue is also used but to a much smaller extent and is equally as stable as far as shelf life is concerned.

Lakes—metallic salts of organic dyestuffs are also in use but are not generally as stable as a classification. The amount used in a shade formula is small since their coloring properties are so great. Therefore even the smallest color change due to fading would produce a noticeable difference in the shade of the powder. However, they do impart a vividness to the powder not easily matched by the inorganic pigments and are capable of producing the same vividness to the skin when the iron oxides appear grayish by comparison. They are therefore still being used in spite of their drawbacks. It is highly recommended however that the lakes be carefully checked, principally, against the essential oils used in the powder since the oils are sometimes much more reactive than is generally believed and could cause a color change as a result. Since the powder is normally not subjected to light there is no reason to

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Cough Syrup

by Wm. R. Keithler

LUCKY HEART LABORATORIES, INC.

The preparation of a cough syrup entails considerable care, since usually, several, and sometimes all, ingredients have, in the case of an overdose, a more or less toxic effect upon the human body.

For years, and still to some extent today, a common prescription item is known as Browns Mixture. Containing an opiate, it is primarily designed for children. This is due to its rather pleasant licorice flavor. By and large, licorice is still very widely used in cough syrups, and cough drops. Licorice has both the ability to mask the unpleasant taste of bitter drugs, and it is also very soothing.

White pine, which comes from the dried inner bark of Pinus Strobus, is used a very great deal in cough syrups. The white pine is usually added, merely for the flavor it imparts, for there is no scientific proof to back up any statement concerning its therapeutic value. The bark, itself, contains a glycoside, called coniferin, the formula of which is, $C_{16}H_{22}O_8 \cdot 2H_2O$, and this when it is decomposed, will yield coniferyl alcohol, which can subsequently be oxidized to vanillin. This process is of commercial value, in the manufacture of vanillin.

The fluid, or solid extract of wild cherry, is another very popular flavoring ingredient in cough syrup. Wild cherry is the stem bark, of Prunus Serotina. The amount of hydrocyanic acid yielded by the bark ranges from 0.05 per cent to 0.35 per cent.

Besides the cyanogenetic principle, according to Peacock[1], tannic acid is also present, in the bark, in concentrations of about three per cent. Owing to the hydrocyanic acid content of wild cherry bark, it was first put into cough syrups, on the theory that the hydrocyanic acid present acted as a cough sedative in cases of subacute and chronic bronchitis. Wild cherry has no actual remedial effect, but this does not alter the fact that it is still a very popular ingredient in cough preparations. This popularity is based upon the unique flavor it imparts to the finished preparation.

Such other flavoring agents as oil of sassafras, oil of tar, and poplar buds are also currently in use, but these do not enjoy the same degree of popularity as the aforementioned two. There is some merit, however, besides the slight flavor it imparts, to poplar buds. It is of value chiefly as an expectorant in subacute and chronic bronchitis.

In dealing with expectorants, it might be well to separate them into the two basic classifications into which they fall. First of all are the sedative expectorrants; or those expectorants, which in their action, increase bronchial secretion. Those that fall into this class, are usually emetics if taken in large doses. The second class of expectorants, are the stimulating expectorants. Those belonging to this class are, to a large extent, secreted in the bronchial mucosa, and their action is to, in some way, either check, or modify this secretion.

The most commonly used expectorants of the sedative type are ipecac, squill, sanguinaria, senega, grindelia, and tartar emetic. These compounds must be measured with great care, for, as I said before, most of these ex-

COURTESY ELI LILLY & CO.

pectorants are violent nauseants. The sedative effect offered by the drugs of this class, is due in part to the mucus which they excite thus coating the walls of the bronchi.

The stimulant expectorants are found to be of more use in the latter stages of bronchitis when it is desired to check the secretion rather than to encourage it. By name, some of these expectorants are: creosote, benzoin, balsams of peru, and tolu, oils of sandalwood, guiacol, copaiba, cubeb, eucalyptus, ammonium chloride, and ammonium carbonate. There are, of course, many others now in use, but the above mentioned expectorants are the original stand-bys. In the variety of cough syrup that is commonly packaged as more or less a proprietary medicine, I mean by this, those syrups which are put up by the numerous small laboratories, and sold through agents as well as retail store outlets, it is not uncommon to find that creosote is one of the main constituents. By the same token, those containing it are usually called Creosoted Cough Syrup, so that it might be used as a selling point. Creosote, however, is nothing more than a bronchial membrane stimulator, with its own characteristic taste, and odor. It is safe to conclude that the creosote is an ingredient of the cough syrup not only for its therapeutic value, but also, with the intention of influencing the final flavor of the cough syrup. It may be said that most cough syrups contain at least one, and sometimes several expectorants; they may be either of the two types, or perhaps, both, in combination. There are several cough syrups in use today that use a combination of creosote, squill, and tartar emetic, as expectorants, and they are all quite effective.

Chloroform and menthol, are two more very common ingredients in cough syrup. The action of the chloroform was thought to be as a respiratory sedative, but the action is much too fleeting to be of much use in this capacity. Still it is very common to see the name of chloroform upon the label of a packaged cough syrup.

Menthol, on the other hand, has a very noticeable remedial effect upon the symptoms of bronchitis. Its vapors have the action of a local anesthetic on the persistent cough and the feeling of oppression in the chest. In some cases of chronic bronchitis and tuberculosis, menthol crystals are stirred into hot water and the patient breathes the vapors, which aids materially, in the relief of respiratory congestion.

Finally, the syrup itself comes into view. Sucrose is, in some cases used by itself to form the syrup vehicle, but there is too much chance of sugar crystals forming in the syrup after it has aged a few weeks. To overcome this problem sucrose is used in combination with glucose at such a level as to prevent the formation of sugar crystals in the syrup. By actual test, I have had excellent results from a syrup vehicle consisting of a mixture of 60 per cent sucrose, and 40 per cent glucose. No sign of crystallization or other precipitate was in evidence, even after prolonged storage at temperatures approaching 65° centigrade. This syrup is not excessively sweet, but has a more subtle sweetness, and is very appealing to the taste buds.

The alcohol contained in a cough syrup, may have a concentration exceeding 10 per cent. I have seen an expectorant containing as much as 24 per cent alcohol, but the most common formulations, contain anywhere from four, to eight per cent. Those cough preparations which contains chloroform usually keep its concentration around two minims per fluid ounce of syrup. The dose, according to the U. S. Dispensatory, is slightly higher, however.

Summarizing the foregoing paragraphs, we find that a suitable cough syrup which is both effective and palatable, might be made up of these ingredients:

1. Alcohol U.S.P.
2. Menthol U.S.P.—Acts as a local anesthetic subacute, and chronic cases of bronchitis.
3. Beechwood Creosote—Acts as a bronchial membrane stimulator.
4. Tartar Emetic—Acts as a sedative expectorant.
5. Chloroform—Acts as a respiratory sedative. (This action is questionable.)
6. Syrup—Acts as a vehicle.
7. White Pine—Acts as a flavoring component.
8. White Squill—Acts as a sedative expectorant.
9. Wild Cherry—Acts as a flavoring component.
10. Caramel—Acts as a coloring agent.

These ingredients, when incorporated in the proper ratio, would, in all probability, produce a pleasantly flavored, effective expectorant cough syrup. Still another cough syrup might contain these ingredients:

1. Alcohol
2. Chloroform
3. Creosote
4. Menthol
5. Ipecac
6. White Pine
7. Wild Cherry
8. Licorice
9. Eucalyptol
10. Sanguinaria
11. Benzyl Alcohol
12. Oil of Tar
13. Syrup

This also might make an excellent, effective cough syrup.

In the formulation of a cough syrup, there are so many things to take into consideration that it would be nearly impossible to mention them all. Among the most important if not the most important, things to remember in formulating a cough preparation is to guard with extreme care the concentration of the expectorant in the finished syrup. An overdose, as I said before, will induce vomiting. Certain other ingredients, too, bear watching. In the event that too large an amount of white pine is added to the syrup, the preparation will have a distinctly unpleasant bitter taste. This is true of many of the ingredients. Too much menthol will leave a burning sensation in the throat. Too much creosote leaves an unmistakable telltale taste. It is by no means a small task to perfect and produce an effective cough syrup, that has no unpleasant taste, or after-taste, and is acceptable to the ultimate consumer.

There are at this time some one hundred and fifty expectorant cough syrups, marketed by the ethical drug houses, and probably that many more are marketed by

(Continued on page 564)

Facts On Toiletry Demand

A study was made for the Toilet Goods Association to establish facts regarding the purchasing habits and usage of toiletry items by ultimate consumers, and to find out, within the limits of the technique used, the influence that different types of advertising exert on the toilet goods market.

Two pretest panels of twenty-five families each were selected and questionnaires were mailed to them on February 11, 1953, to test the wording and lay-out of the questionnaires. Upon their return, these questionnaires were used as a basis for correction of the final questionnaires, which were mailed on February 25, 1953, accompanied by a letter of instructions, to 1,500 consultant families comprising one and one-half of two national panels.

Families in these panels participate in the activities of National Family Opinion, Inc., on an entirely voluntary basis without remuneration, and are selected cross-sectionally by the use of four statistical controls; namely, geographic areas, population densities, income, and age groups. For the purpose of this study it is especially important to note that families selected compare closely with U. S. Census data in regard to the four controls mentioned above. The survey was closed for tabulation on March 9, 1953.

Interesting and important facts revealed by this survey follow:

Tooth pastes and toothpowders were purchased by 81 per cent of the respondents. Next in line were shampoos with 70 per cent, followed by deodorants with 63.3 per cent, and hand lotions and creams with 58.4 per cent. Major items least often mentioned were bath preparations other than soap at 18.3 per cent, make-up bases at 21.4 per cent, and perfumes at 29.1 per cent. The distribution of other major toiletry items ranges from 31 per cent for nail enamels and removers to 55.7 per cent for hair tonics and dressings.

It seems to appear that the drug store is still the best all-around toiletry goods distributor at the retail level. Yet while drug stores, five and dime stores, and supermarkets seem to do most of their business in the more necessary toiletry items, such as tooth pastes, shampoos, hair tonics and deodorants, department stores seem to have a higher percentage of their sales in lipstick, cologne, face powder, and perfume lines; total beauty and barber shop sales seem to be far behind the sales made through any one of the other retail outlets.

While there is an indication that for tooth pastes and powders, shampoos, shaving soaps and creams, talcum and dusting powders, bath preparations, hand lotions and creams, cleansing creams, and lipsticks, respondents seem to favor more or less markedly large sizes, the opposite is true for perfumes, and nail enamel and remover. Medium sizes seem to be favored for hair tonics and dressings, deodorants, colognes and toilet waters, and special skin creams. An approximately even distribution between medium and large

seems to exist for after-shave preparations, face powders, and make-up bases.

Table Showing Percentage Distribution of Prices Paid by the Majority of Respondents for Major Toiletry Items

Items	Prices Paid Most Often	Per Cent in Respondents in that Range
Hair Tonics & Dressings	$ .30-1.99	70.0 per cent
Shampoos	.30-1.99	74.0 per cent
Shaving Soaps & Creams	.10- .99	65.0 per cent
After-shave preparations	.30-1.99	67.0 per cent
Toothpastes & Powders	.10- .99	77.0 per cent
Perfumes	1.00 and over	63.0 per cent
Hand Lotions and Creams	.30-1.99	72.0 per cent
Face Powder	.50-3.99	71.0 per cent
stickLip	.60-1.99	66.0 per cent

A finer breakdown of this table indicates that the highest percentage of respondents pays between $1.00 and 1.99 for almost all units of toiletry items, with the exception of tooth pastes and--powders, shaving soaps, creams ($.60 to .99), and nail enamels and removers ($.10 to .29).

Purchases of certain toiletry items seem to differ for various age groups, purchases of shaving soaps and creams, and face powders seem to increase with increasing age, while purchases of deodorants, perfumes, lipsticks, and nail enamels and removers seem to fall off with increasing age.

In general, the purchasing of necessary toiletry items, such as tooth pastes, shaving cream, etc., does not seem to be influenced by differences in income, while other items, such as shampoos, make-up bases, lipsticks, and nail enamels and removers show an increase in purchases with increasing income.

It is indicated that the concentration of male purchases definitely centers around toiletry items intended for male use. The same is true of female purchases in regard to toiletry items intended for female use.

Approximately 64 per cent of the answers indicated drug stores to be the place of first choice for the purchase of toiletry items, followed by department stores at 21 per cent, five and dime stores at eight per cent, and supermarkets at three per cent.

In general, indications seem to point toward the fact that for toiletry item purchases drug store and department store patronage increases percentagewise with increasing age, and five and dime store patronage decreases with increasing age, supermarket patronage increases from age 15-20 to 21-30 and then drops off again, and that house-to-house selling is generally unaffected, with the exception of a decrease for respondents 46 years and over.

Drug stores and supermarkets were mainly selected for their convenient location and because they carried the brand used by the respondents. Department stores were selected mainly because of a more complete selection and carrying the brand used, five and dime stores because of convenient location and lower prices, and house-to-house selling because of availability of brand used and delivery service.

It seemed to be indicated that the majority of respondents makes only one purchase of perfume, face powder, and make-up base per year. An almost equal distribution for one and two units was indicated for cologne, a majority of purchases of bath preparations, cleansing cream, lipstick, and home permanents seems to be made twice a year, while purchases of talcum and dusting powders are almost equally divided between one, two, and three to four times yearly. Hair tonics, shaving creams, deodorants, hand lotions, and nail enamels and removers are bought three to four times a year by the majority of the respondents, shampoos, and tooth pastes and tooth powders between five and nine times yearly.

The age group under fourteen years shows a majority for tooth pastes and tooth powders, while the use of practically all other toiletry items was started between the ages of 15 and 24 by the majority. One exception is the home permanent, the indications pointing to a majority starting age of 25 to 34 years.

The North Central region of the United States seems to lead with toiletry goods purchases, followed by the Northeast and South (about equal), and with the West left relatively far behind. An analysis of the per cent of purchases of major items with the total regional purchases as a base seems to indicate that in general slightly more of the various items are bought in the North Central region than in any other of the various regions, which show an almost equal distribution.

It is indicated that the rural market for toiletry items on the average is about half of that of all urban markets combined. In general, there is no indication of a difference in the amount of purchases of various toiletry items between rural and urban areas, with the exception of slightly higher purchases of shampoos and home permanents in rural areas, and a slightly higher percentage of lipstick purchases with the increase of population densities.

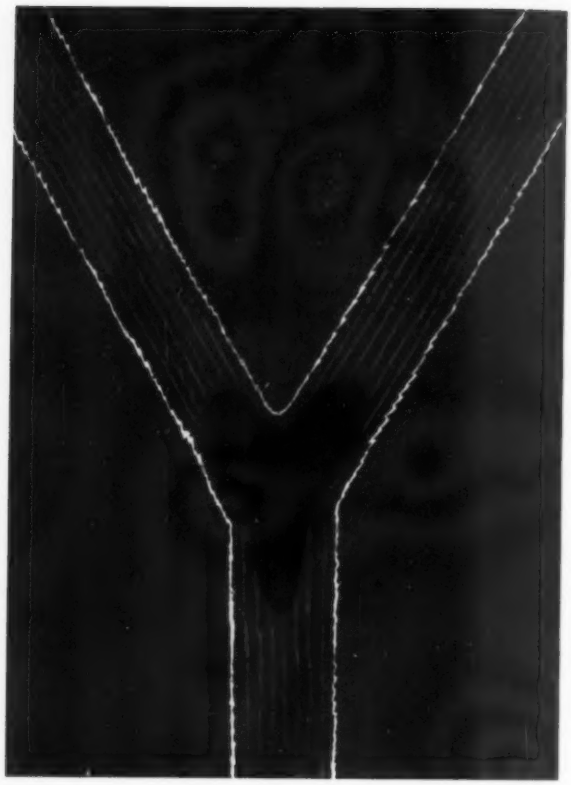
Advertising influenced 43 per cent of the respondents in their toiletry item purchasing, against 39 per cent who said that advertising did not influence them. Those who indicated that advertising influenced them, gave—magazine, television, radio, and newspaper advertising in that order as having influenced their purchases of toiletry items.

Sources of most useful information received on toiletry items were received from friends and relatives by 27 per cent, from magazine advertising by 16 per cent, from sales persons in stores by 13 per cent, and from television by 11 per cent.

Out of all respondents, only 14 per cent indicated that they purchased toiletry items because of store displays, while 72 per cent indicated no effect from store displays. In general personal experience was the most important deciding factor, followed by brand or company name, and recommendations by friends or relatives.

As to the toiletry items used in greater quantity than last year by the respondents, an increase in usage was shown for hand creams and lotions, hair tonics and dressings, and shampoos over the increase in usage for other toiletry items. The age group from 31 to 45 years almost consistently for all toiletry items shows an increase in usage higher than the average.

(Continued on page 559)



Anti-Coagulants

by Dr. J. L. Boyle
EDINBURGH, SCOTLAND

Blood coagulation means the conversion of fluid blood into a solid clot. Biological processes such as this, in which there takes place an obvious physical change, have always aroused interest. In the case of coagulation, the diseases of the veins that may follow its untimely occurrence within the human body, have made this subject of great practical importance.

It has long been recognized that there are four factors which contribute to venous thrombosis, as this pathological condition is called. These are: inflammation of the lining of the circulatory organs; impairment of circulation; alteration in the constitution of the blood; increase in the tendency of the blood to coagulate. The interplay of these factors is exceedingly complex and in an attempt to clarify it, investigation has been directed towards the mechanism of coagulation. This has led to the discovery of a group of compounds, called anti-coagulants, which have the common property of inhibiting the coagulation of blood though they do not all reach this end by the same route. They not only inhibit it, but, in certain circumstances, they can reverse the process of coagulation and so they have a therapeutic value.

By far the greatest limitation to their use lies in the fact that any agent which inactivates one or more of the factors required for coagulation of blood can bring about a hemorrhagic state, which may have a fatal ending.

Another disadvantage is that the physiological response to them varies greatly amongst different patients so that it is difficult to predict the quantitative effect of a particular dose. This makes it necessary to submit each patient to laboratory blood tests in order to establish the pattern of response throughout the course of treatment, and such close control can be provided only where well-developed hospital facilities are available. Because of these drawbacks, anti-coagulant therapy is described by some doctors as a mixture of anxiety and frustration to them. They must always be alert to the possibility of the patient's blood condition "escaping" to the point where hemorrhage will follow.

These difficulties and others, less serious, lend support to the minority opinion that anti-coagulants are not advisable agents to use in venous thrombosis but in fact, are dangerous capillary poisons. On the other hand, the majority of specialists seem to accept the statistical evidence claiming a great diminution in the number of fatal cases of venous disease when anti-coagulant drugs have been selectively and carefully used.

However, no matter where the balance of opinion of medical experts lies, the fact that there is this defect in the known anti-coagulant compounds is a challenge to drug manufacturers to produce something better. This incentive has produced results but even the latest product is not free from risk; all that can be said is that the degree of risk has been reduced.

The Coagulation Mechanism

To understand how an anti-coagulant drug exerts its effect, it is necessary to have some insight into the mechanism of blood coagulation. This occurs by the interaction of two proteins present in the plasma fraction of blood, namely, fibrinogen and thrombin. The latter catalyses the change of fibrinogen to fibrin, that is, of fluid blood to a blood clot. Though, as a catalyst, it is not changed in the reaction and requires to be present only in minute amount, nevertheless it is thrombin that is the decisive factor in the process of coagulation. Although thrombin is present in various tissues of the body, it does not seem to occur as a permanent constituent of blood. But, in blood there is a group of substances which react together to form as much thrombin as is normally required for coagulation purposes. This reaction may be thought of as taking place in several stages.

Firstly, blood platelets undergo disintegration and yield prothromboplastin. Secondly, this substance is changed, by interaction with anti-hemophilic globulin, into thromboplastin but this, and subsequent stages, occur only in the presence of calcium ions and the rate of conversion is accelerated to that typical of normal blood, by adequate concentrations of three accessory factors—called factor V, factor VII and Christmas factor. These factors possess great clinical importance because the absence, or deficiency, of one or other of them in the blood causes hemophilia, or a disease related to it; and it is through these "accelerators" that the anti-coagulant drugs exert their clinical effects.

Thirdly, by reaction between thromboplastin and factor VII, an activated form of the latter, called convertin is produced. Fourthly, convertin changes prothrombin to thrombin but, here again, the rate of conversion is dependent on the presence of an accelerator—factor V.

The over-all effect of the coagulation mechanism is even more complicated than this sequence of reactions indicates, because it seems that the system is autocatalytic, that is, the end products influence the formation of the accessory factors, as in a chain reaction. Thus, thrombin is necessary for the production of factor V from its precursor in blood and fibrin is needed to cause the disintegration of blood platelets, which leads to the appearance of prothromboplastin in blood.

Heparin

Though the idea of an anti-coagulant drug is not new and preparations such as hirudin—an extract of leeches, the composition of which is still unknown—and salicylates had been used with some success, yet the discovery, by McLean and Howell about fifteen years ago, of heparin is usually taken as the starting point of this form of therapy as we know it today. Heparin is obtained from the livers or lungs of domesticated animals and, since it exists there only in very small amount, it is expensive and scarce. This, together with the fact that it is less effective when administered by any other route than the intravenous, has limited its use to conditions and cases where the synthetic anti-coagulants cannot compete with it. It is generally admitted to be the most effective drug in this group and it is appreciably quicker in its action than any of the others. For this reason, heparin is given to urgent cases of thrombosis to reverse quickly the coagulation mechanism and later it may be gradually replaced by a more conveniently administered, but slower acting, anti-coagulant.

It is known that heparin inactivates both thrombin and prothrombin, but whether one of these actions is of more physiological significance than the other is difficult to decide. Either way, the chain reaction of coagulation is interrupted by removing thrombin from the scene of action. Heparin qualifies for the title "anti-coagulant" because, in this way, it shows that it has a stronger affinity for thrombin than fibrinogen possesses. There are other anti-thrombic agents, even in blood itself, but they are not anti-coagulants because their affinity for the enzyme is less than that of fibrinogen. This brings out the point that the property of being an anti-coagulant is not an absolute one but is rather a matter of degree.

Heparin is said to have a wider range of action than the synthetic drugs and to be more reliable. It attacks the coagulation mechanism at a different point from them and there is no mutual antagonism. Consequently, they can be used simultaneously and so overcome the main drawback to heparinization, which is, that its cessation may be followed by a recurrence of the thrombotic process. This difficulty has been attributed to heparin upsetting the body's physiological control of blood clotting so that, when its administration stops, there is a backward swing towards excessive clotting. This tendency is reduced by replacing heparin gradually with one of the orally administered members of the group and continuing the course of treatment for a relatively prolonged time.

Chemically, heparin is a nitrogenous polysaccharide for which the formula given in figure 2 has been proposed[1]. This shows that the amino group in the glucosamine portion of the molecule is esterified with sulfuric acid and not acetic acid as is usual in such mucopolysaccharides. It has been reported[2] that the naturally occurring heparin contains a second anti-coagulant, called beta-heparin, which differs from the above in that the glucosamine moiety is replaced by galactosamine.

Dicumarol

The discovery[3] of this, the first synthetic member of the group, and its isolation in 1941 by Prof. K. P. Link and his colleagues at University of Wisconsin provide an interesting example of how research in one subject may lead to results of great practical significance in another. It was known to agriculturalists that if sweet clover hay was improperly cured, it could be toxic to animals fed with it. The animals died from a hemorrhagic disease, the cause of which was traced to a coumarin derivative. But there were known to be more than sixty different coumarin compounds derived from

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The Drug Store Picture

A Look at the Lilly Digest

The Lilly Digest of retail drug store income and expense statements for 1952 was recently issued by Eli Lilly and Company, Indianapolis, Indiana. This 21st annual edition digests statements of 1,305 retail drug stores. These stores were selected because they submitted complete statements of income and expenses, including accurate inventories, and because they were the same ownership and in operation throughout 1952.

The average total sales of these stores was $95,985. Cost of merchandise sold averaged $64,081, or 66.8 per cent; gross margin averaged $31,904, or 33.2 per cent; total expenses averaged $26,210, or 27.3 per cent; and net profit averaged $5,694, or 5.9 per cent. The proprietor's salary allowance averaged $6,734, or seven per cent; and employees' wages averaged $10,177, or 10.6 per cent.

Of the 1,305 stores included in the analysis, 20 per cent showed net profit greater than 10 per cent of the sales of these stores; 34 per cent showed a net profit of from five to nine per cent of sales; 23 per cent showed a net profit of from two to four per cent of sales; 12 per cent showed a net profit of less than two per cent of sales; and 11 per cent operated at a loss.

Drug store sales for the stores reporting established a new high at the average of $95,985. This represented a 6.9 per cent increase over the 1951 figure of $89,756,

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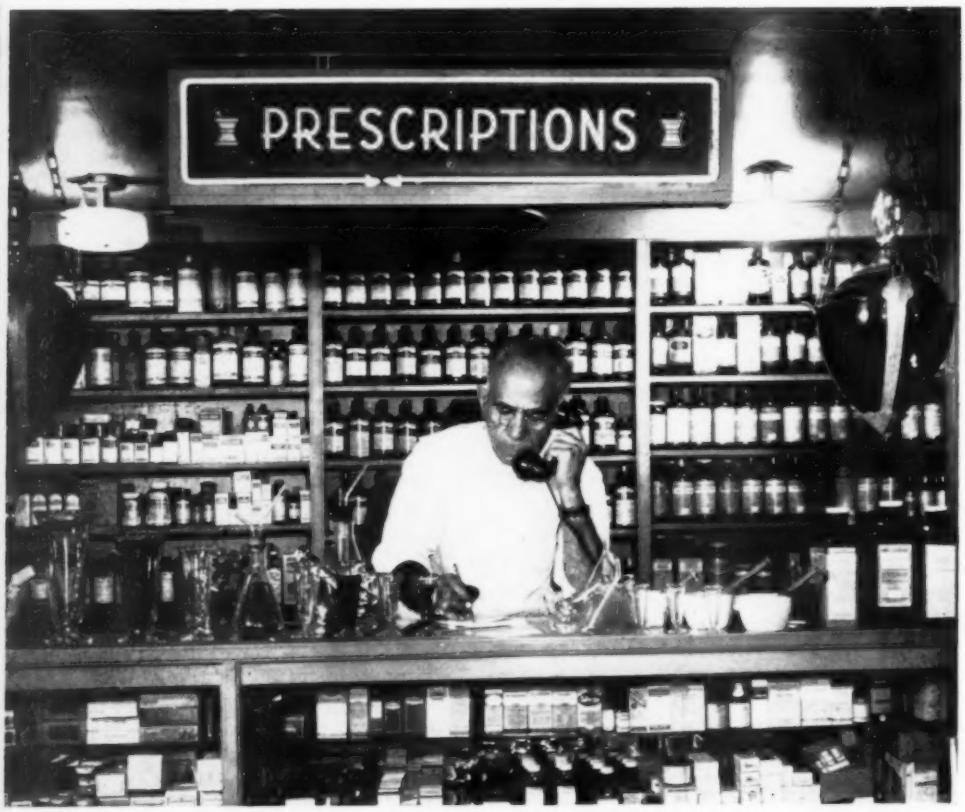

which was the previous high. Other figures back to 1939 are:

1950	$83,540	1944	$52,297
1949	83,641	1943	46,916
1948	86,059	1942	40,414
1947	76,520	1941	36,005
1946	69,422	1940	34,882
1945	62,038	1939	33,982

"The 1952 net profit was nearly $500 above that of 1951." says the Digest "In the case of drug store owners who served full time as managers of their stores, the gain in total income, which is net profit plus proprietor's salary, was more apparent than real. The proprietor's salary declined over $400, making the total income (pay for personal service plus profit on the investment) $12,428 in 1952. This was only slightly above the 1951 total income of $12,353. When sales rise, it is natural to expect total income to go up at an even faster rate, because many of the operating costs are fixed expenses, regardless of sales volume. Such was not the case in 1952.

"Although employees' wages increased dollarwise, there was an appreciable decline in the percentage of sales devoted to employees' wages. The rate of increase in wages did not measure up to the rate of increase of sales. Undoubtedly, this is an indication of the skill of management and the efficiency of the employees.

"The percentage of sales paid for rent also declined during 1952. Rent averaged 2.2 per cent in 1952 as compared with 2.5 per cent in 1951."

"Other expenses," which includes everything but salaries, wages, and rent, rose from 5.3 per cent in 1951 to 7.5 per cent in 1952, offsetting the decline in proprietor's salary, employees' wages, and rent. This increase is described as "probably a reflection of the later stages of the inflationary cost rises that have been experienced throughout the United States." However, the Digest concludes that "Whatever the cause, the fact that drug stores were able to overcome new handicaps and to maintain profits at peak rates should be a source of satisfaction and pride."

"Most gratifying is the substantial rise in gross margin from 32.6 per cent in 1951 to 33.2 per cent in 1952," says the Digest, which points out that this was the highest gross margin attainment in all of the thirteen years (1940-1952), and that 1952 was the only year in which gross margin exceeded 33 per cent.

A slight increase in the annual rate of turnover of merchandise stock and in the amount invested in this stock was recorded in 1952. The rise in the average merchandise stock on hand was less than four per cent from 1951 to 1952. The sales increase in that time was almost seven per cent, resulting in a slight increase in stock turnover.

"There have been reports that retailers are swamped with such a plethora of new products that bankruptcy is imminent," says the Digest. However, one is referred to figures which show that in 1952 the average profit per dollar invested in merchandise stock was $0.360, against a 1951 figure of $0.343. The value at cost of merchandise stock stood at $15,796 in 1952, against $15,227 in 1951.

With regard to the growth of the prescription department in the drug store the Digest says:

"There have been some suggestions in recent years that the change in character and size of the prescription market has been accompanied by developments adverse to the retail drug trade. For example, the feeling exists that the creation of new therapeutic agents, one after another, has forced drug stores to overstock to the extent that new additions are destroying all possibility of profit from their sale.

"There has been even more vigorous opposition to the multitude of duplicates which almost invariably appear following the release of a new therapeutic agent. Some people in the drug trade get so worked up about duplicates that they seriously seem to be willing to surrender their own freedom of action (and that of their fellow pharmacists) and to let some giant bureaucracy or group of government overseers decide what and how therapeutic agents may be marketed.

"Possibly there would be some merit in these and similar complaints and proposed remedies if the situation actually were forcing drug stores to operate with little or no prospect of profits."

A total of 785, or about three out of five, of the 1,305 drug stores upon which the 1952 Digest is based, requested, in addition to the regular analysis, a study of their prescription departments. These stores supplied month-by-month records of prescriptions filled and refilled and of the income from these prescriptions.

When the 785 stores are grouped according to the proportion of prescription income in each store to total sales, the following facts may be derived:

1. Gross margins rise with an increase in the proportion of prescription sales. A retail druggist requires and receives a higher margin for the professional services and responsibilities involved in filling prescriptions.

2. Drug store proprietors place a higher value on their personal services and withdraw higher salaries as prescription income rises in relation to total sales.

3. Employees' salaries also go up but not at the same rate as prescription income. This is important, because employees' salaries are shown in these stores to be the biggest single item of expense.

4. There is no appreciable difference in the part of the receipts paid in stores doing under 25 per cent of their sales in prescriptions, in stores doing 25 to 40 per cent of their business in prescriptions, or in stores doing over 40 per cent of their business in prescriptions, for rent and for miscellaneous store expenses. In fact, the miscellaneous store expenses are lowest in the stores with 40 per cent or more of their sales made up of prescription income.

5. All this adds up to the fact that a higher proportion of prescription income goes right along with a rise in the rate of profit on all store sales. Indeed, when allowance is made for difference in the amount of the proprietor's salary, the contrast is even more striking. The combined total of proprietor's salary allowance and

(*Continued from page 569*)

Prescription Trends and What Makes Them*

by William T. Doyle

VICE PRESIDENT, ORGANON INC.

In 1939 U. S. drug stores had $165,700,000 income from prescriptions; 1952 saw this figure soar to $815,000,000. It is significant to point out that in 1939 prescriptions were only 10.6 per cent of total store sales, while in 1952, the percentage jumped to 20.1 per cent. This tremendous dollar increase in the professional side of pharmacy calls for a careful evaluation of the reasons for this phenomenal growth. Certainly, the fact that the average prescription price increased from 91 cents in 1939 to $1.98 in 1952 is hardly an answer to the remarkable upward trend of the prescription business.

For many months now, we have been studying trends and what makes them. During this time, we have traveled across the entire breadth of the United States, and have discussed the subject with owners of almost one hundred busy prescription pharmacies. Our sales force and a market-research organization have given us the benefit of practices of another 418 pharmacies. In addition, through the cooperation of our representatives and field managers, we have been able to learn the attitudes and opinions of over one thousand physicians as well.

Population Pattern. At the present time, the U. S. population is estimated at 156,500,000 which is a sharp increase from the 130,877,000 of 1939. The experts say the outlook for continued growth is bright, and we shall probably reach the 200,000,000 mark well before the end of the century.

In the past five years, more than 18,500,000 babies were born in America which is an average of a little under four million additions each year. Current estimates indicate 1953 alone promises to show the highest increase in births in our entire history—4,000,000 newborns!

. . . The number of deaths in 1950 totaled 1,456,000 or 9.6 per 1,000 population.

. . . Admissions to registered hospitals exceeded 17 million.

. . . During the past decade, the number of families increased by 25 per cent—from approximately 32,000,000 to 40,000,000.

. . . 1953 shows an average annual-income rate of $3,300 per family unit which is an all-time high. There are close to 62,000,000 workers in the civilian labor force at the present time.

. . . 19,000,000 married women are working. This constitutes a big potential market, although a less permanent one; as we all know when recessions occur in the economic cycle, married women are affected first.

The age distribution of the population has been undergoing significant changes. As a consequence of the recent rise in the birth rate, the proportion of children under five years of age has increased from 8.0 per cent in 1940 to 10.8 per cent of the total population in 1950, thereby reversing the trend in evidence since 1860. The percentage of older people has been rising

*Presented before the Section on Pharmaceutical Economics, American Pharmaceutical Association.

steadily for an even longer time. In 1950 the proportion at ages 65 and over was 8.2 per cent—exactly twice that at the turn of the century.

From these figures, it is easy to see that our prosperity is built on the solid foundation of an expanding population that is working hard, making money, and interested in buying products and services that will keep them healthy and give them more time to enjoy themselves.

Know More About Your Customers. It is a rule of thumb among many sales executives that 25 per cent to 30 per cent of a sales force bring in 65 per cent to 70 per cent of the sales volume. A close analysis of drug stores in any community will reveal that a very small percentage of the total number get the cream of the business. When we asked "why?", here is what we learned.

I. *Professional Service.* When the customer telephoned or visited the store, he was given polite and prompt attention. Above all, the professional dignity of the pharmacy encouraged confidence. It is coincidental and interesting that the recent NARD survey showed that 66 per cent of the customers interviewed stated that they preferred to buy their drug products in a pharmacy because they have "faith in the druggist's personal advice."

II. *Adequate Stocks.* All but four of the five hundred pharmacies stressed the importance of having adequate inventory. Over one-third of the drug stores believed they had built their success on a *well-managed inventory.* We were very impressed with the excellent and modern inventory-control systems that even three of the two-man stores had. It was pointed out by practically all that fresh-looking merchandise, well displayed, helps sell itself. It was stressed, time and again, by the successful owners that a pharmacy should not tie up limited capital in too much dead, slow-moving merchandise. Of course, many pharmacy owners pointed out that the very nature of a drug store requires some products on which the demand may be sporadic. However, these should be screened carefully.

III. *Fair Pricing.* It was surprising that over 60 per cent of the pharmacies voiced the opinion that prices should be fair to both the public and the pharmacist—this seemed especially evident in the case of prescriptions. Several incidents were recited by pharmacists of competitors who were pricing the prescriptions so high that customers were taking their business elsewhere. Others pointed out the tendency of some to take all the profit out of some prescription preparations. The cortisone situation was cited the most frequently as an example of some pharmacies actually losing money on cortisone in order to get other customer business.

It is evident that the retail-drug business is prosperous. However, there are a few danger signs which are worthwhile pointing out. In the first six months of this year, Dun & Bradstreet report 59 retail-drug-store failures involving liabilities of $2,084,000. At the present rate, the number of drug-store failures for 1953 will total approximately 118 to 120.

It is also interesting to note that the point at which retail-drug stores are most vulnerable to bankruptcy is during the first five years. It is during this time that the greatest percentage of failures occur. If a retailer is successful in getting beyond the five-year period, the chances are excellent that he will survive the battle of competition.

In analyzing the reasons for retail-drug-store failures, Dun & Bradstreet has found that the following are the most common causes in order of their importance:

Inadequate Sales	46.3 per cent
Excessive Fixed Assets	14.8 per cent
Competitive Weaknesses	14.8 per cent
Inventory Difficulties	13.9 per cent
Poor Health	7.5 per cent
Poor Location	7.5 per cent
Heavy Operating Expenses	5.6 per cent
Receivable Difficulties	1.8 per cent

By and large, the public believes the charges on prescriptions are fair. A recent survey among a cross-section of five-hundred residents of North Carolina (JAMA July 18, 1953, Pg. 1145-1149) revealed that 61 per cent felt the prescription charges were fair while 39 per cent thought they were not. This compares quite unfavorably with the physician. Here, 72 per cent thought the doctors' fees were fair and only 28 per cent did not. It is certainly obvious that the almost four out of every ten persons who believe they are being overcharged on prescription should be educated to understand otherwise.

Today, there are an estimated 170,000 practicing physicians in the United States. This is quite an increase over the 145,000 M.D.'s, of 1939.

According to the latest Medical Economics survey of income, general practitioners net themselves $14,098 annually, specialists $17,112, and partial specialists $15,119. The average net income for all physicians is $15,262, which, compared with $4,470 for the year, 1939, is proof enough that the public is much more interested in protecting its health than ever before.

Now, of course, it is important to know what these busy, prosperous physicians are prescribing. As we suggested earlier, inventory control is a very important part of successful store management, and since 20.1 per cent of total store sales are prescriptions, it is most vital that prescription trends be known.

Probably the most comprehensive continuing study of prescription trends is that conducted by the Research Society Inc., of Boston, Massachusetts. A recent summary of their findings (based on a study of 231,860 prescriptions) showed the following breakdown of prescriptions by therapeutic classification:

25.88 per cent of the prescriptions called for an anti-infective.

(*Continued on page 563*)

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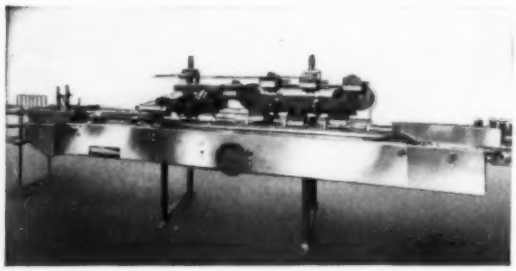

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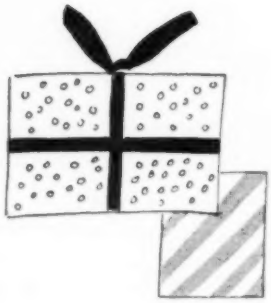

Packaging and Selling

Perfume or Package?

Traditionally for perfumes and cosmetics the package has been almost as important as the product. The presentation, in the sense that the French perfumers use this word, includes the package and such things as display. This presentation has always been planned with great seriousness to give the right psychological effect to the claims for preciousness and beauty of the product. Also, since perfume sales have been approximately 80 per cent gifts, perfumers have always believed that an expensive, usually lavish and often grandiose package has been essential for a successful perfume. Of course there have been notable exceptions, such as the Chanel bottle with its fine simplicity, but even here the beauty of this specially-made bottle is clearly evident in spite of the simplicity of design.

There seems to be a strong trend reversing this traditional school of thought in the perfume industry, Like the old query, which came first, the chicken or the egg, some perfumers are now asking themselves,"If we want to reduce prices to a point where we can achieve more consumption, which comes first in importance, the package or the perfume?"

There is a growing feeling in the perfume industry that it is all very well to have the consumer think of perfume as something rare and precious but it isn't at all well to have this same consumer wait on the sidelines until somebody gives her the perfume as a gift and then to treasure this bottle of perfume by very infrequent use only on gala occasions. The American woman has been so thoroughly indoctrinated with the idea that perfume is precious that she not only reserves its use for rare occasions but refuses to believe that the perfume may be desirable for her use unless the price is so high that she rarely buys it herself in a direct purchase.

In times past there have been many efforts to convince American women that an acceptable perfume of fine quality can be marketed at a reasonable price which she could afford. Several years ago, the late Mr. William Schultz spent a great deal of money with Leigh Perfumes to prove this point but failed to convince American women.

A few years ago, one of the most dramatic methods of accomplishing this objective was tried by Lelong. The plan of Lelong brought an uproar to the industry, not only among other perfume manufacturers but among many top department stores specializing in retailing perfumes. The Lelong plan was to simplify the package to a minimum cost so that, in their own words, it was practically "a medicine bottle." Two new odors were produced with this presentation, that is, Lelong No. 6 and Lelong No. 7. In spite of the uproar that resulted from these new perfumes in severely simple packages and to the publicity and word of mouth that accompanied this presentation, these two perfumes were not a success. Various trade theories were that the odors were new and unknown to the public, that they were presented in 2 oz. bottles which is an extravagant amount of perfume for any American woman to possess and that it was rather odd for Lelong to present this very severe package because their whole history in this country has been predominantly a packaging operation. Nevertheless, Lelong did go frankly all the way in this new conception in perfume packaging. The two perfumes made and packaged in France were sold here at retail for $9.00 for the 2 oz., a previously unheard of price for a fine perfume and particularly for an imported French perfume. While other perfumers and some leading retailers were making indignant noises during this campaign, it is curious to note that in several cases, their own thoughts began to work in this same direction. That is, a portion of the perfume industry began to believe that the cost of the package was marked up to

M. FRANKEL

retail price imposing too severe a price handicap on perfume to get the wider volume use that the industry is seeking for fragrance. For instance, one perfume manufacturer who pays an average of 60c per each bottle made for him in France and in consequence charges the consumer $3.00 for this bottle at the retail sale is now instituting a promotion where excellent machine-made replicas of these same bottles cost the company 5c and therefore only cost the consumer 25c. Another perfumer of a popular expensive odor has recently changed a very expensive highly decorated bottle closure for a plastic closure costing substantially less money. This perfumer reports, after a careful check, that he has had no consumer reaction of any kind. Apparently, the customer has accepted the change without thought or comment. Still another well-known perfumer is meeting this situation by stressing a severely simple refill bottle. The original bottle in which this perfume is packaged is an unusual, beautiful and expensive imported French bottle which at retail prices costs the consumer more than $8.00. This, of course, is a big chunk of the final retail price and means that this perfume must not only sell in the upper price range of imported perfume but that it must also be relegated almost entirely to a gift product. Now this perfume company is stressing in their promotions the idea that once a customer has acquired this beautiful original bottle he can continue the use of this perfume at a much more moderate cost by buying a simple refill package.

It is too early to tell yet whether the idea of an expensive package, theoretically in keeping with the expensive product, is undergoing a change of thought in the perfume and cosmetic industry. It is true that the people of this industry are thinking much more definitely in terms of an enlarging market, than has been common in the past. The number of women using fragrance for instance, is considerably less than half the number of women using lipstick. In spite of the fact that the fragrance industry, through such devices as the perfume cologne, the stick perfume and cologne and other methods have managed to give the American woman fragrance at a reasonable price without destroying the psychological factors of price, there is still a general opinion that price is an important factor in holding this industry back from the full potential use of the product.

When the cost of each of the factors that enter into a perfume are considered, that is basically the fragrance and the package with all its component parts, it is very clear that a number of perfumers are paying very much more for the package than they are for the product and are therefore jobbers of packaging material to a much greater extent than they are sellers of their own manufactured product. Perfumers ordinarily mark up their price from their cost, to the retailer price, by multiplying by five. By the time they have added 500 per cent to the price that they pay for the bottle, the box, the label and the cap, they have arrived at a high retail price for their product which makes any really large sales volume impossible.

The fact that in ordinary marketing, the package has to have the same markup as the product, may mean, under a much more competitive sales market, a revision in thinking toward the package somewhat along the lines that are now emerging in small but definite pattern in the perfume industry. At least extravagance in packaging, unnecessary gadgeting and designs or parts which cannot be cold-bloodedly justified either for a functional purpose or for impulse sales or competitive eye value at the retail counter may be coming in for a new severe judgment.

Thanks

The keynote of the vending machine industry, meeting in Chicago last week, was personality for the machine. Said one leading spokesman, "Machines aren't cold and impersonal anymore. We are giving them a personality of their own through colors." He added there is now a machine under consideration which has a recording which will have the machine say "thank you," after each customer makes a purchase.

How many times recently has a salesman in a retail store said "thank you" when you made a purchase?

Beauty in America

Tide Magazine has a 200 member leadership panel. In a recent meeting of this panel, 77 per cent of the members agreed that it is the responsibility of advertising to make the "luxury of today the necessity of tomorrow." The panel cited a number of products which are normally considered luxuries today such as home air conditioners, automatic dishwashers, etc., that they would expect to become the necessities of tomorrow.

Interestingly enough, none of these products cited for future conversion into necessities included cosmetics. As one of a major group of packaged products which have been defined as luxuries by the Director of Internal Revenue, we would like to know whether the panel, in failing to mention any cosmetics, has accepted the fact that this transition to necessities have already taken place.

In line with this, Bill Zimmerman sends me a quotation from a woman's magazine, "It's not the landscape experts, the architects or the painters who have done most to improve the beauty of America. It's the lipstick manufacturers."

Adv. Expenditures

When it comes to expert knowledge of mass production, mass distribution and mass advertising, the cigarette people can certainly talk with the authority of real experts. Cigarettes are the most widely and intensively distributed product in this country. These packaged products are sold through more than 1,300,000 retail outlets to over 60,000,000 smokers who smoke more than 400 billion cigarettes.

Cigarette companies spent about 77,000,000 dollars in 1952. This amounted to ¾ of a cent a pack or to about two per cent of sales. This advertising expenditure compares with a little over three per cent of sales for textiles and over four per cent for home furnishings, about the same for food products and a little over five per cent for alcoholic beverages. Drugs and cosmetics are supposed to average about 28 per cent, although

As science continues to wrest secrets from nature, firms like Walgreen bring the benefits to millions. In the science of finer packaging, Sheffield welcomes the opportunity to contribute sound design, flawless printing, and collapsible tubes of uniform quality and dependability.

Plan details of your next tube-packaging campaign with the specialized assistance which is yours for the asking from Sheffield Tube.

THE SHEFFIELD TUBE CORPORATION

Home Office—New London, Connecticut
Sales Offices—New York, Chicago, Los Angeles

DRESSING UP makes the difference!

This is our 6-ounce Contoure Line bottle capped with an Empress molded closure. Other sizes are 1-, 2-, 3-, 4- and 8-ounce. They combine Duraglas quality with stock-mold economy.

Smart lines... flair for color... stylish ACL labels blended imaginatively create an outstanding salespackage.

May we submit our ideas for a Duraglas salespackage for your products?

Duraglas packages are protectors of quality

TRADE MARK REG. U.S. PAT. OFF.

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

in this industry there is undoubtedly a far wider variation than in any other industry. Probably cosmetics, with a few extreme cases reaching 50 per cent of sales invested in advertising, offers the best example of the extreme limit for advertising expenditures.

Too Hasty Cooperation

It must have been somewhat shocking to a number of people in publishing and advertising to notice the open cynicism with which the editors of two leading and highly-respected consumer publications went out on the limb so hastily and so greedily on anti-enzymes. While almost every lay reader probably did assume from these articles that this was another spontaneous combustion in the miracle of scientific discovery, most people in advertising and in publishing saw very clearly the obvious and not very fine Italian hand of the publicity agent.

This whole episode was probably one of the most open and blatant cooperation with future advertisers that we have seen in a long time.

We are not taking any position at this time on the value of the anti-enzyme in a dentifrice or the value of the research work that has been done or the stage to which it has progressed but it does seem to us that in this tempestuous rush to be the first outstanding cooperator the editors of these leading publications could have consulted a few authoritative sources to discover that the time was not quite ripe for pulling trigger in such a positive and vigorous fashion. Maybe we ought not to be too critical; maybe this is just one of the things that freedom of the press means.

Simultaneous Research

One of the problems of accelerating research in the drug industry is the frequency with which one or more companies simultaneously come up with a new discovery. In some cases this may be natural because research may be directed along a well-defined path guided by signs already known to the research departments of the drug companies. That is why a new product helpful in any one particular disease, particularly the diseases for which there are public foundations, may appear at the same time in the laboratories of one or more companies. In the latest furor in the tooth paste field, most of the manufacturers of tooth paste showed up in the same boat, even if each one of them did have a different oar in his hands.

Retailers Should Know Why

The big mail order companies are reporting that people in cities and towns all over the country are displacing the farmer as the best customer for mail order business. Sears, Roebuck and Co., the biggest of them all, reports that its current mail order volume is the best in its history with the biggest portion coming from urban and suburban customers.

The tremendous expansion of house-to-house selling in this country during the last ten years and the growth of this form of selling in the cosmetic business is probably largely due to the expansion of these companies into urban selling.

Retailers from time to time in various places do a lot of squawking about the inroads that are being made in their business by mail order and house-to-house selling. But so far as we know, there has been no authentic market research made by retail interests to discover just what values the mail order people and the house-to-house people are giving the customer to cause this growing preference to buy by mail or from the visitor at the front door.

What Makes Us Rich?

In discussing the business future, the President of one of the leading chemical companies fell back upon an economic factor which seems to reassure all businessmen when they talk about the future of business and of American prosperity. That is, our increasing population.

It is on the record that this country has added about twelve million people during the last ten years and that we expect to add as much as one million people a year for the foreseeable future.

That is a pretty addition to the number of consumers in this country and nobody ought to argue with the fact that it must be contributing in a big way to business expansion.

However, we cannot help wondering just why certain places like Puerto Rico and India and also Italy are universally going deeper and deeper into the red as far as per capita income, living conditions and other factors of economic wealth because, as the economists all say, of overpopulation in these countries.

It seems that an increasing population in the United States is a big factor in continued prosperity but an increase in population in any other country is the reason for increasing poverty.

Industrial Uses for Drugs

We have stated before in several articles our conviction that the pharmaceutical industry is a sleeping giant just about beginning to awaken to vast opportunities in new fields of research, market investigation and potential sales.

In these articles, we have stated our conviction that three great new fields of exploration, which have been investigated only in a fringe way in this industry, are nutrition both human and animal, animal health and plant health.

Now to this we add another great field for exploring to the wide horizon of the pharmaceutical industry's future. At a recent meeting of the Chemical Society, a group of chemists from the Hiram Walker & Sons, Inc. Research Laboratories at Peoria, Illinois, have found certain antibiotics beneficial in eliminating bacterial infection that may contaminate grain alcohol and other fermentations. These researches reported penicillin is the best suited for this function and that its use has commercial possibilities.

Pharmaceutical manufacturers have within the last few years been alert in exploring the possibilities of their products in the animal and the plant world. So

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For example—
Fitments for metal containers (spouts and caps for aerosol shaving soap)
For example—
Fitments for glass nursery bottles
For example—
Cosmetic containers
For example—
Specialty items—Tire valve and battery caps

Owens-Illinois packaging know-how and high-quality standards offer you the *finest* in molding plastic facilities . . . Injection molding . . . Compression molding . . . A complete range in plastics for packaging, for specialties.

Plastics Division — Owens-Illinois

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Albany . . . New York	Detroit . . . Michigan	Oklahoma City . . . Oklahoma
Atlanta . . . Georgia	Fresno . . . California	Omaha . . . Nebraska
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Birmingham . . . Alabama	Indianapolis . . . Indiana	Philadelphia . . . Pennsylvania
Boston . . . Massachusetts	Jacksonville . . . Florida	Pittsburgh . . . Pennsylvania
Buffalo . . . New York	Kansas City . . . Missouri	Portland . . . Oregon
Charleston . . . West Virginia	Los Angeles . . . California	Richmond . . . Virginia
Charlotte . . . North Carolina	Louisville . . . Kentucky	Rochester . . . New York
Chicago . . . Illinois	Memphis . . . Tennessee	St. Louis . . . Missouri
Cincinnati . . . Ohio	Milwaukee . . . Wisconsin	St. Paul . . . Minnesota
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Columbus . . . Ohio	New Orleans . . . Louisiana	San Francisco . . . California
Dallas . . . Texas	New York . . . New York	Seattle . . . Washington
Denver . . . Colorado	Oakland . . . California	Toledo . . . Ohio

far as we know, little or no chemical or market research has been devoted to industrial uses. It may be that such a new concept would open wide and now unsuspected markets for some of the products of pharmaceutical manufacturers in industrial processes which after all are biological, such as fermentation.

Best Salesman the Package

In a recent article in Printers Ink, Mr. W. A. Gates, President of Groceteria Super-Food Market, has a few things to say which, in our opinion, should be quoted. Mr. Gates is a great believer in the package and the inferences in several of his statements are that the right package with the right display will lick any kind of national advertising.

Here are some of the things that Mr. Gates has to say in this article.

"Today as the buyer passes row after row of competing brands of the same article, human curiosity naturally suggests trying something else. If that doesn't happen, a more attractive label or package may catch her eye and there is better than even chance that the sale will, be diverted to another brand.

"We had non-advertised regional brands of canned foods outselling the nationally-advertised brands because of more attractive labels. Small business seems to have an advantage over the nationally-distributed brands in that a change of label or package is not so complicated for the small manufacturer. Under self-service it is right there in the package that the established brand meets its toughest competition.

"The tie-in with national advertising is not as important to us as the national advertisers claim. The package itself makes a bigger difference.

"Pall Mall cigarette packages are a good example of packages that sell. There is something about that beautiful rich-looking red package that has a strong appeal to women smokers. At the service counter, Pall Mall gets a preponderant share of women package buyers.

"National Biscuit cookie packages are an example of what can be done with cellophane and color contrast. Different colored cookies have different color combinations imprinted on the cellophane. Apparently a color expert with a full understanding of color psychology has here developed the ultimate in silent salesmanship with other widely advertised cookies on the same island. The checks I sign clearly indicate N. B. C. to be rapidly stealing the show; increasing anywhere from one-third to one-fourth in a comparatively short time.

"Bis-Quick and Fisher's Biskit Mix are two packages on which are printed pictures of the finished product in actual colors. Fisher's is a regional brand with little, if any, advertising. Bis-Quick outsells it, but Fisher's enjoys good volume because of a gloss color job on better paper stock. Bis-Quick recently obliterated much of the picture on the face of its package with a notice of a coupon enclosed. The disfigurement has resulted in some increase in Fisher's sales. Whether the value of the coupon advertising will compensate for the switch in this competitive area is doubtful.

"Holsum Bread recently replaced the old wax wrapper with a beautiful red semi-plastic wrapper. Production of the local baker of Holsum increased 146 per cent; our own sales verify this statement of a remarkable selling job for a package.

"Because of observed facts like these, we place packaging at the top of our list for judging the salability of products today. Good packaging is the big plus. At the other end of the merchandising list is a big minus as far as we are concerned. This minus is the couponing employed by many national organizations.

"Coupons destroy brand preference. They are the worst nuisance ever inflicted on the food market operator and he handles them at a financial loss.

"What we at retail need is less pushing of artificial devices like the coupon and more good advertising that shows average people how to solve their average problems. We know that local advertising works; we want to know more about value of national advertising.

"Mailing a prospectus of a coming national advertising campaign may be a waste of time, effort and money for the retailer. So it had always seemed to me and I contacted other operators only to find that none had or took the time to read such mail; so I consign it to the wastebasket."

One More Step for Shopping Convenience

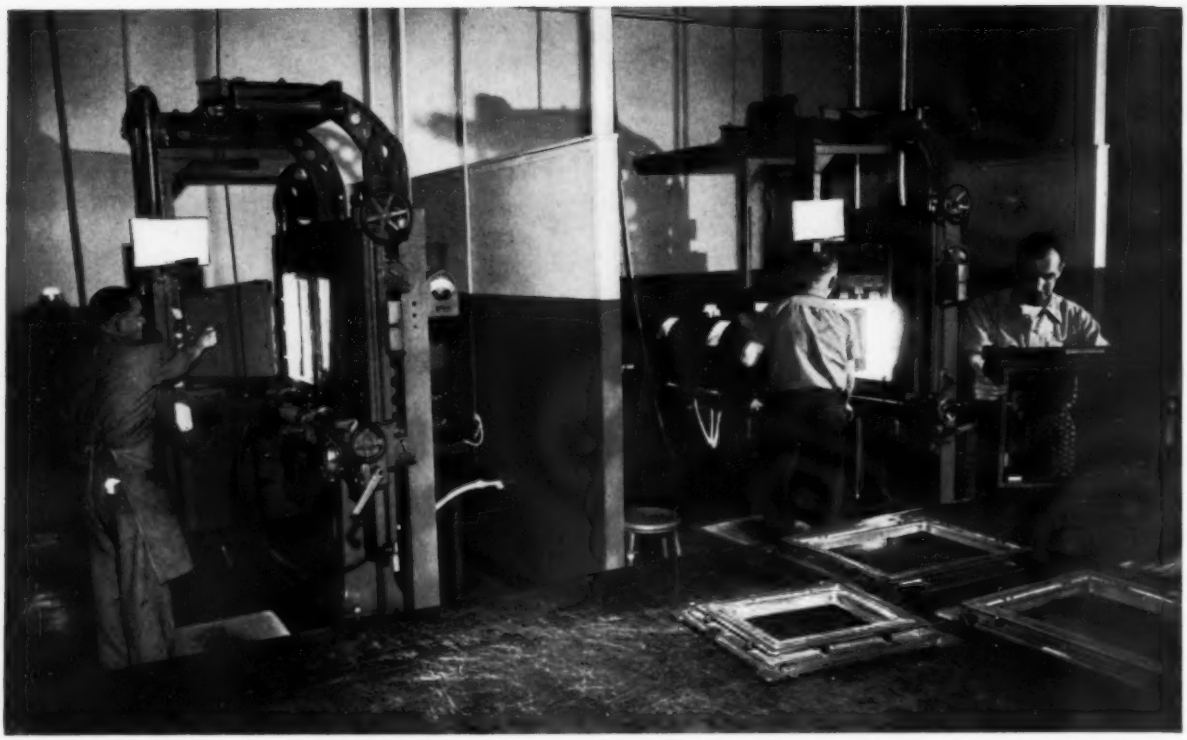
One of the fastest-growing fields in retailing, which has not received much attention, and which has been submerged in the excited discussion over the development of branch department stores and million dollar shopping centers and suburban trade in general, is the growth of spot selling, largely through automatic machines, in large industrial factories.

The automatic cafeteria for hot and cold sandwiches, pastries, desserts, cigarettes, candy and a wide variety of liquid refreshments is growing at an enormous pace in the plants of large corporations where thousands of people are concentrated in a relatively small confined space.

To date this type of retailing has been thought of in terms of restaurant operation for employee morale, rather than in terms of retailing. However, so successful has it been and so enormous is the concentration of traffic on this one spot that it is remarkable that this type of automatic vending has not expanded into other household necessities, particularly from those of the two branches of this industry.

The grocery super-market has been riding a tidal wave of enormous expansion based largely on two factors, that is a traffic superior to other types of specialist retailing and the convenience of self-service.

It seems to us that automatic vending machines in a factory that employs from 5,000 to 20,000 people or more, over half of whom are women, offers a stream of traffic normally greater than anything possessed by a super-market, offers a superior availability of shopping because the people are already at the point of purchase and offers a convenience even superior to self-service. Maybe the factory vending machine which transfers the point of purchase to the place where the customer is already standing will some day jar the pants off the super-market operator. At any rate, this should be something for alert sales managers in the pre-sold mass-distributed toiletries and home necessity fields to really keep their eye on.



Continental's photo-compositors transfer images to metal with infinite care

MAY WE ARRANGE A SITTING FOR YOUR PRODUCT?

Continental people are as anxious as you are to have your proprietary product look its Sunday best. When you bring it to us for a lithographed metal container, we treat it like royalty.

That goes in our big camera rooms where the pictures and text of your label design are captured on film. And again, in the photo-composing rooms where the film image is transferred to a metal printing plate. Our people have the brains, the equipment — and the interest in your product — to make plates that pick up the tiniest detail of design and register perfectly when colors are applied on high-speed presses.

For years we've worked for some of the biggest names in the toiletries-drugs field. We've built up a long-list of helpful services, performed by designers, artists, lithographers, engineers, package-machinery specialists and others. Let us show you how we hand-tailor these services to your particular needs.

CONTINENTAL CAN COMPANY

Continental Can Building,
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EASTERN DIVISION
100 E. 42nd St., New York 17

CENTRAL DIVISION
135 So. La Salle St., Chicago 3

PACIFIC DIVISION
Russ Building, San Francisco 4

Dermetics is presenting a new Hand and Body Lotion with deodorant properties and a hygienic plus - ingredient to keep the skin fresher and cleaner and to discourage skin blemishes. Called Pink Dress, it is said to absorb readily and leave the skin smooth.

Dr. Salsbury's Laboratories has announced the preparation of the first infectious bronchitis vaccine licensed by the Federal Bureau of Animal Industry. It is an attenuated live-virus vaccine which produces a dependable immunity and is safe for healthy birds of all ages. The vaccine has been used experimentally on over 20 million birds in extensive field trials.

Lakeside Laboratories has introduced Obelip, the first preparation for metabolic control of obesity, protecting the already-damaged liver of the overweight person. The product contains important lipotropics which aid and protect the liver by curbing fatty deposition and mobilizing depot fat for metabolic burning.

Lederle has a new vitamin, mineral and hormone product—Gevrine Capsules—which was developed to meet older patients' requirements for vitamins and minerals needed in normal metabolism. It also provides the positive effects on protein and bone maintenance that are produced by the estrogen and androgen hormones.

Smith, Kline & French Laboratories is offering its analgesic preparation Edrisal with Codeine, in a new strength. The new form contains Benzedrine sulfate, acetylsalicylic acid, phenacetin and codeine sulfate, representing an increase of ¼ gr. in the codeine content. It will be available, on prescription only, in bottles of 100 tablets.

Nestle-LeMur has announced two packaging changes: Nestle Baby Hair Treatment is now packaged in an attractive newly-designed 6-package counter unit which is pink, blue, black and white. Nestle Spraze, a lanolin-enriched hair spray, will be offered in a giant 11-ounce can for $1.25. The regular value is $2.

Zonite Products Corp. is introducing a new orange and red package for its well-known Forhan's tooth paste. A special—two large-size tubes, 94-cent value for 69 cents—will be used to promote the new package to the consumer.

Ames Company has announced its latest Freescription mailing, Apamide-Ves, the new effervescent analgesic-antipyretic.

Burroughs Wellcome has prepared Tricoloid brand Tricyclamol Compressed, Sugar-Coated tablets, an anticholinergic drug, with apparently selective action at the parasympathetic ganglia and end organs.

Abbott has introduced Erythrocin Ointment, a topical antibiotic preparation containing Erythrocin in a bland hypoallergenic pretrolatum for the treatment and prevention of pyogenic lesions of the skin.

The Wm. S. Merrell Co. is introducing Ganatrex, a vitamin-mineral-trace element combination, to druggists by the novel "Phil Furst" plan. Under this plant, the druggist receives, free of charge, a 1-ounce taste sample and an 8-ounce bottle, making his first 8-ounce sale cost free. In addition, for further prescriptions the druggist receives a 16-ounce bottle for which he is charged.

Warner-Chilcott Laboratories has announced the availability of Methium Chloride in 500 mg. tablets. This is the first oral form of the hypotensive agent hexamethonium chloride. The addition of the 500 mg. tablet to the 125 and 250 mg. sizes now in use will give the physician a wider range of dosage forms for the treatment of high blood pressure.

Warner-Chilcott has also announced the preparation of Peritrate-phenobarbital tablets, for use in managing angina patients who also require sedation. This is said to eliminate the

Faster Capping

To get greater line speeds, you need a cap that will take the punishment of higher speeds without raising the level of your "normal" cap breakage. And that's just what Armstrong's Hi-Tork® Caps have been designed to do.

You'll be amazed at the beating these caps will take. One big reason, of course, is that they're heavier (weigh them and see). But more important is their special design. Dome, thread, and skirt are designed to handle exactly the share of the load each must take. And a simplified external design eliminates projections that could chip, break off, or cause hang-ups.

A test run on your own equipment will quickly show how Hi-Tork Caps can help you get extra production from your lines. We'll gladly arrange for performance tests in your plant. For details, contact your nearest Armstrong office or write Armstrong Cork Co., Glass and Closure Div., 5310 Chambers St., Lancaster, Pa.

ARMSTRONG'S "HI-TORK" MOLDED CAPS

Doings ... (CONTINUED)

need for double dosing heretofore required in such cases.

Schering has released Dormison, 500 mg., new higher-strength capsules, especially recommended as an hypnotic for adults. It relieves tension in nervous individuals and is beneficial when administered prior to examinations and technical procedures.

Ives-Cameron Co. is distributing Duotinic Capsules, containing all known essentials for the rapid regeneration of hemoglobin and red blood corpuscles. They are indicated in the treatment of most of the commonly encountered anemias of the Hypochromic microcytic or hyperchromic macrocytic type.

Harriet Hubbard Ayer is presenting Roulette Red Lipstick and Rouge.

Bostwick Laboratories is releasing Air-Gene, a new aerosol room deodorant which also helps prevent the spread of airborne infection. It is said to fight germs that might cause flu, mumps, and other infectious diseases.

Upjohn has announced the availability of hydrocortisone (Compound F), which it is making through a further development of the microbiological fermentation process. It will be marketed under the trade name of Cortef and will be available only on the prescription of a physician.

Burroughs Wellcome & Co. has released Codempiral No. 2, a yellow-and-orange capsule containing a combination of Empiral and Codeine Phosphate. It is used for the relief of pain associated with anxiety and tension.

Wyeth has introduced Penegan Expectorant Troches without Codeine, for administration to children. The new dose form provides local anesthetic action plus loosening of mucus for treatment of coughs and other minor irritations of the upper respiratory tract.

Marvin R. Thompson has introduced the following products: Quinidate Capsules, indicated for disturbances of cardiac rhythm; Detonal Tablets, for prompt and smooth prolonged sedation without post-sleep hangover; Verastan Tablets, for hypertension. The Verastan is also available in liquid form.

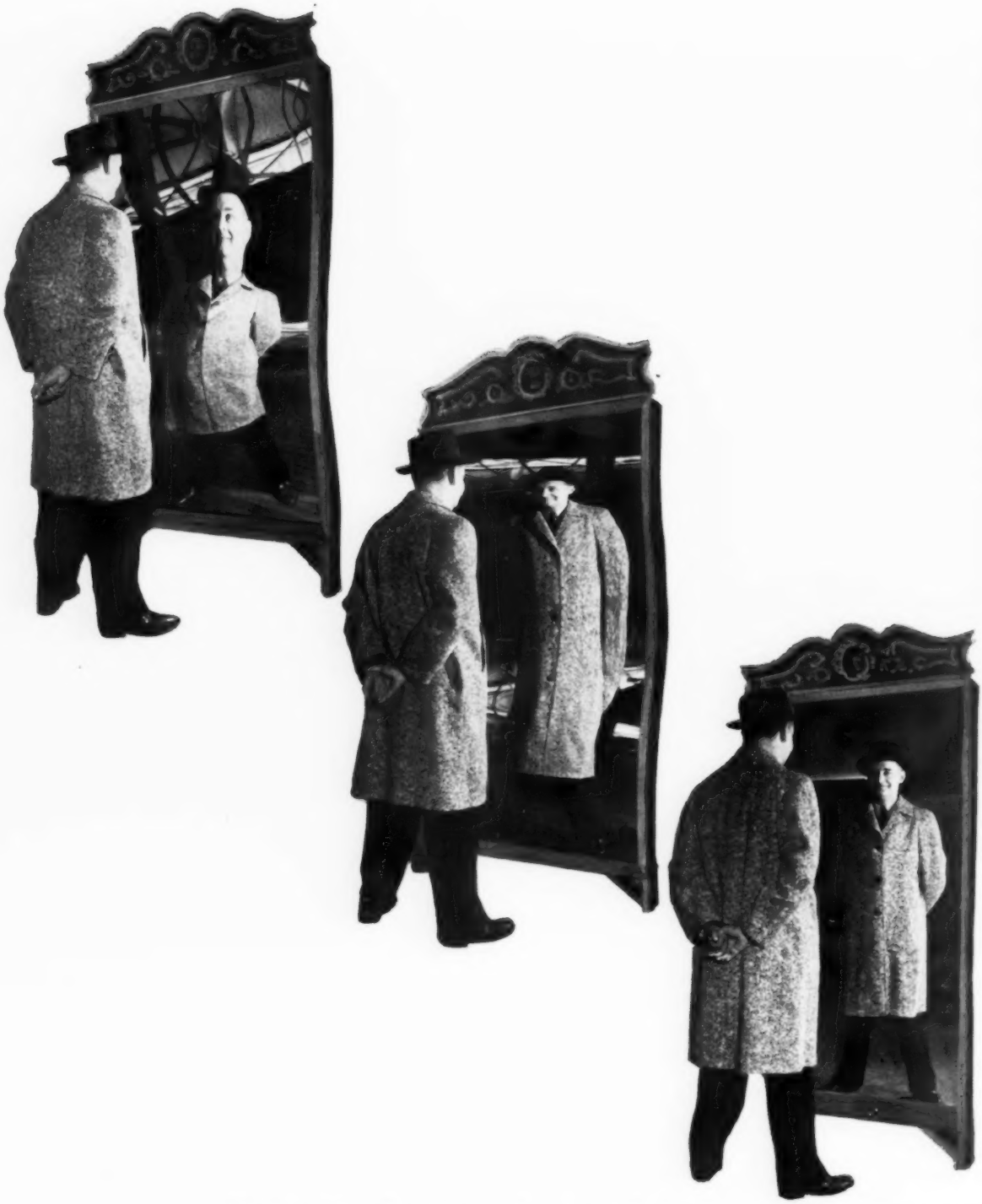
Vick Chemical Co. has prepared Mild Vicks Va-tro-nol, a new aqueous nose drop which is isotonic and is made in a unique pectinized base. The resulting increase in viscosity, according to the company, prevents the nose drops from running quickly out of the nose or down the throat. It helps hold the medication where it is most needed to bring longer-lasting relief.

Lederle has placed a new vitamin formula on the market, Stresscaps, which is especially designed to supply the increased vitamin needs of patients during periods of physiological stress. Each capsule contains ascorbic acid, Thiamine mononitrate, riboflavin, niacinamide, pyridoxine hydrochloride, calcium pantothenate, vitamin B_{12} activity, folic acid and menadione.

Wallace Laboratories has changed the name of its Bactratycin Ointment to Intraderm Tyrothricin Cream. The product is a topical preparation containing tyrothricin in a special base, making the antibiotic more penetrating. It is used in such pyogenic skin infections as impetigo, abscesses, varicose ulcers, wounds and eczema.

Toni has changed the name Toni Creme Rinse to Tame Creme Rinse, in conformity with the company policy of assigning individual names other than "Toni" to its products.

Tussy Cosmetiques is introducing Beauty Plus Duo for the woman with an "over-thirty" skin. A special value package, Beauty Plus Duo contains the regular $3 size of Beauty Plus Hormone Cream in addition to a two-ounce complimentary bottle of Beauty Plus Hormone Lotion.



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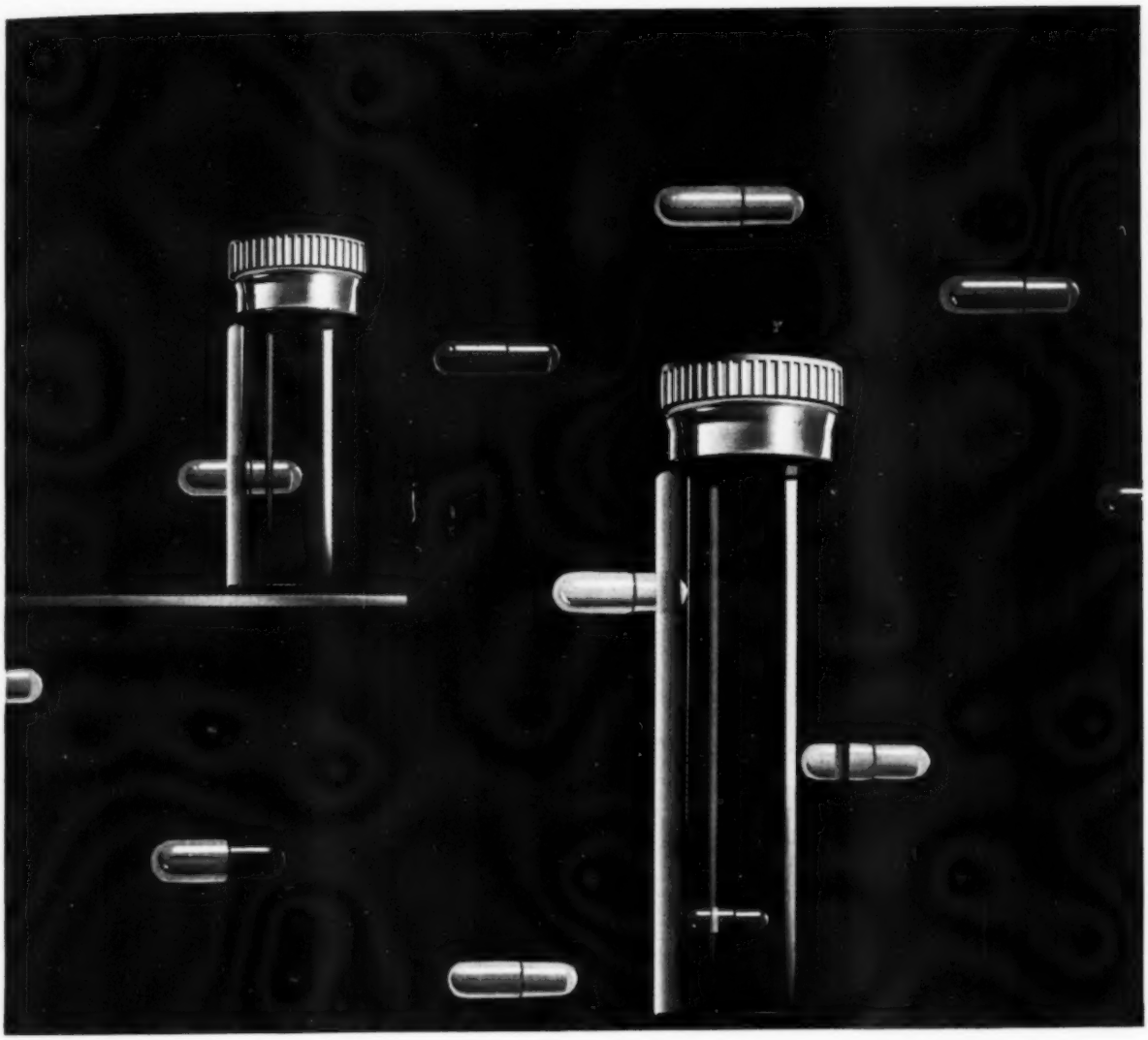
Cincinnati 8, Ohio: Ralph H. Auch, 3449 Custer Road
New Orleans 19, Louisiana: R. P. Anderson Co., 925 N. Solomon Pl.
Houston 19, Texas: R. P. Anderson Co., 5643 Overbrook Lane
Dallas 2, Texas: R. P. Anderson Co., 1122 Texas Bank Building
St. Paul 1, Minnesota: Alexander Seymour, 712 Pioneer Building
West Coast: Wm. J. Stoepker, 331 E. Colorado, Arcadia, California
Canada: Sun Tube Corp., 145 Spruce Street, Ottawa, Ontario
Mexico: Tubos de Estano, S. A. de C. V., 174 Oriente No. 267, Colonia Moctezuma, Mexico, D. F.



SO CLEAR, THE CAPSULES SEEM TO FLOAT IN SPACE

Kimble Opticlear Vials are made of such extremely clear glass that their contents virtually seem to float in space. That is part of the classic beauty of these vials especially designed for fine prescriptions and fine pharmaceutical products.

Adding to their efficiency in repelling moisture that sneaks through the sidewalls and bottoms of some types of containers, is a moisture-proof closure especially engineered for Kimble Opticlears, that is moisture-proof beyond anything else in the market.

Opticlears' easy-in and easy-out closures, clear and sparkling glass have helped make outstanding sales successes for a broad and varied assortment of pharmaceutical and proprietary tablets and capsules, fancy food items, spices and advertising novelties.

Kimble Opticlear Vials are only one of many Kimble contributions of engineered glass products to the nation.

Kimble Serves—with Glass

KIMBLE (K) PRODUCTS

Color-Break Ampuls . . . Insulux Glass Blocks . . . Laboratory Glassware . . . Thermometers and Hydrometers . . . Towel Bars . . . Glass Rod and Tubing . . Chemically Resistant Glassware . . . Custom-made Bottles . . . Pressed Glassware . . . Clinical Glassware . . . Opticlear Vials . . . Television Bulbs . . . Communication and Power Insulators

(K)

KIMBLE GLASS COMPANY

Toledo 1, Ohio—*Subsidiary of Owens-Illinois Glass Company*

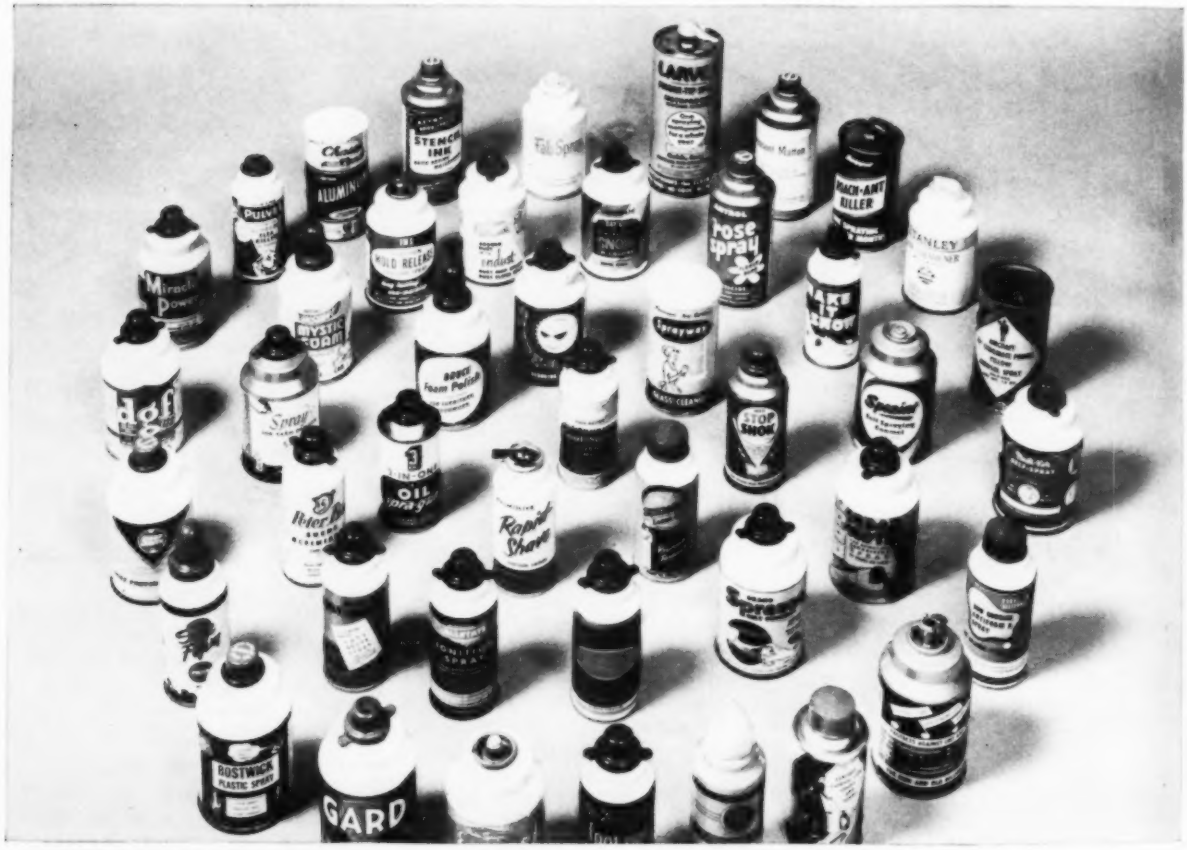
AEROSOL PACKAGING GIVES

Modern Method of Dispensing

Today, there are over 40 different types and styles of aerosol products on the market. The phenomenal growth in popularity of the aerosol method of dispensing has led dozens of manufacturers to pressure-pack products previously dispensed by other methods. In many instances, this modern way of packaging has given an old product type a new look . . . new sales appeal.

Aerosols are unique. They dispense the product by means of a compressed liquefied gas . . . generally a Du Pont Freon® fluorinated hydrocarbon propellent. Upon release of the valve at top of a container, the product is dispensed in the form of a space spray (insecticide or room deodorant), surface-coating spray (plastic spray or paint), or as a foam (shave cream or hand lotion).

The sketches at right show a cross section of typical space-spray or surface-coating and foam-type aerosol containers. Note that the shaded area at the bottom consists of a combination of "Freon" propellent and active ingredients in liquid phase. In the unshaded portion above, the "Freon" propellent is held in vapor phase at approximately 35 pounds pressure at 70°F. This pressure, which remains virtually constant until the can is empty, serves as the propellent force, and when the valve is opened, the solution is pushed up the outlet tube or standpipe, through the valve and out the discharge noz-



DU PONT "FREON" SAFE

SCORES OF PRODUCTS A NEW LIFT

Steadily Gains Popularity

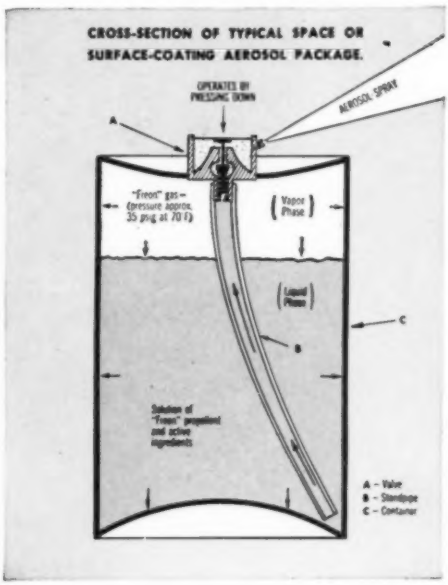
zle. In a space spray, the versatile "Freon" propellents blast the active ingredients into such minute particles that they float in the air for long periods of time. In foam products the "Freon" propellents produce a fine, bubbly lather.

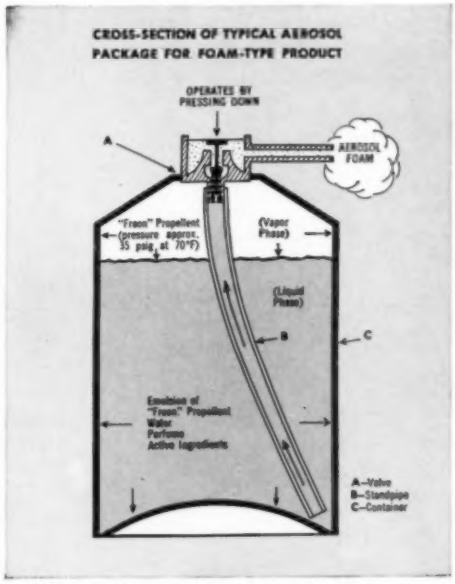
The aerosol method of dispensing appeals to consumers because it offers many advantages over other types of containers. For example, aerosols are more convenient, easier to use, quicker and do a more effective, more thorough job. In addition, they are economical because a little of the product will do a lot.

Retail dealers everywhere have been quick to appreciate the sales potential of this modern method of packaging, and many have promoted aerosol products extensively. Consumers, too, have shown their hearty approval of aerosols by steadily purchasing more and more of them. Recent figures released by the C.S.M.A. (Chemical Specialties Manufacturers Association) show that nearly 100 million units of aerosol products were packed during 1952 . . . more than double the number packed during the previous year!

The vast majority of these aerosol-packaged products contain a Du Pont "Freon" propellent . . . ideal for the purpose because these propellents are manufactured in strict accordance with exacting, laboratory-controlled methods that insure their quality and uniformity . . . factors which contribute to the satisfactory performance of aerosol products. In addition, they are safe . . . nonflammable, nonexplosive and virtually nontoxic.

Why not consider the possibility of pressure-packing one or more of your own products . . . or of developing a new one for marketing in modern aerosol containers? There are a number of contract loaders who will package aerosols to specifications in any quantity, and if you require technical assistance, write to us. "Package for Profit," a guide to aerosol packaging, will be sent upon request. Write also for Du Pont's latest survey of the aerosol market. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Del.





DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

PROPELLENTS

KINETIC
REG. U.S. PAT. OFF.

"FREON" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents.

glamorize and merchandise

your solid cologne
solid toilet water
facial and hand creams
deodorants
after shave lotions

with the **NEW KING SIZE**
1 OUNCE CAPACITY

cal umet

IN GLORIOUS COLORS AND COMBINATIONS

no moulding required... product can be poured directly into container... eliminates necessity for costly foil wrapping.

CALUMET *Manufacturing Co., Inc.*

565 FIFTH AVENUE, NEW YORK 17, NEW YORK, MURRAY HILL 8-4270
PLANTS: NEW YORK CITY, BLOOMFIELD, N. J., WATERBURY, CONN.
IN CANADA: CALUMET DIVISION OF ERIC H. HARDMAN, LTD.
137 WELLINGTON ST., WEST, TORONTO, CANADA

PAT PEND

Your package can win Consumer acceptance–

acceptance based on convenience . . . on the complete *satisfaction* of UNIT PACKAGING Super-Sealtite *Feather-Light Tear.

Your package can feature protection against contamination, breakage, spoilage. Because of *Feather-Light Tear it can feature an ease of access to your product not obtainable with other methods of unit-packaging.

The complete UNIT PACKAGING service—from your product in bulk to its delivery in packages—calls for no capital investment for you. Let UNIT PACKAGING save you money on packaging for standard sale use or for sampling—and with a package that has already won consumer approval. Details and samples are yours for the asking.

*REGISTERED

Notice! Super-Sealtite provides

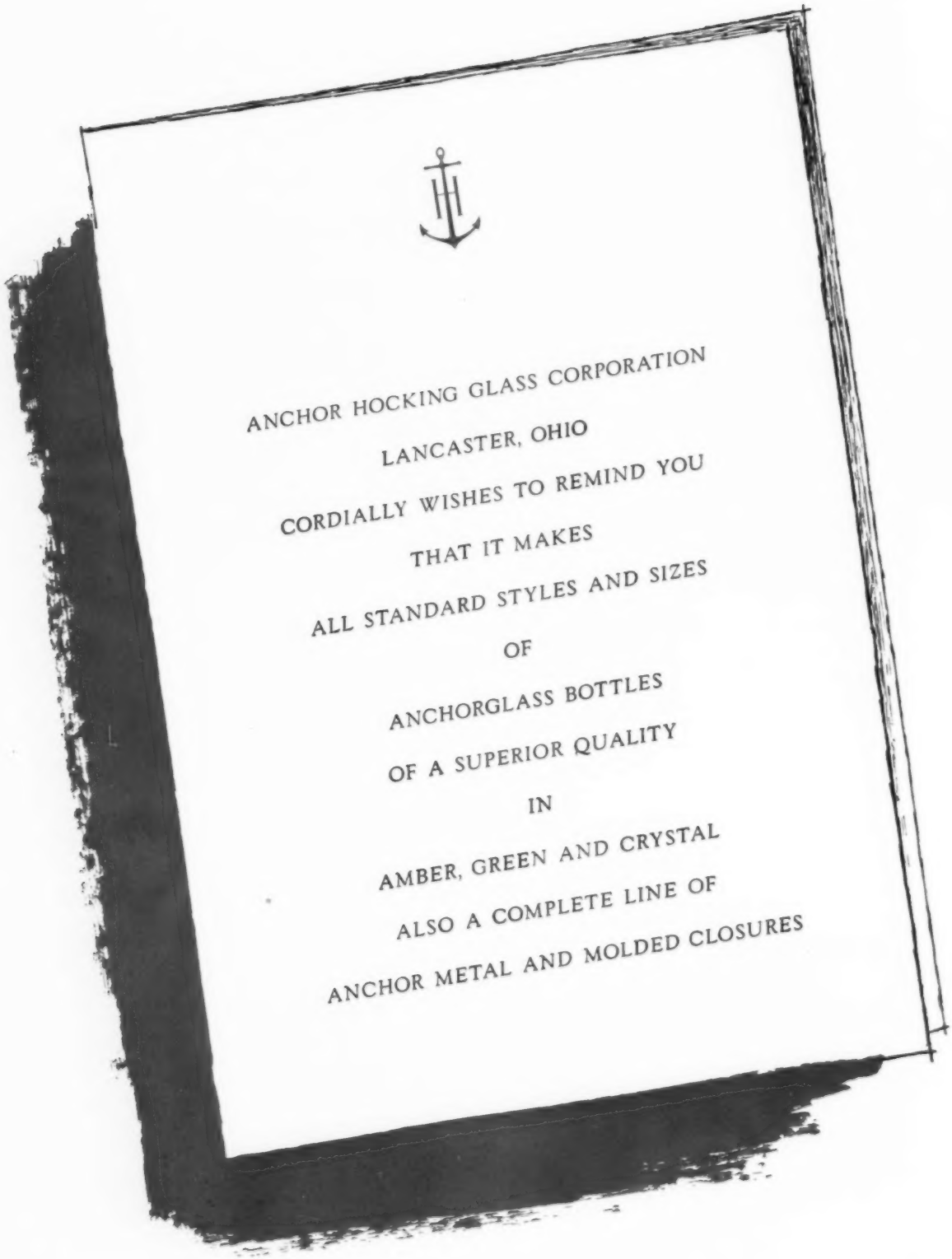
- *Feather-Light Tear (not just a series of pin-point perforations). Double tear notches—on opposite sides of each pocket.
- Complete Protection—attained through selection and adaptation of the right packaging material for your product.
- Easy Adaptation of package to varying product sizes, requirements and new package design.

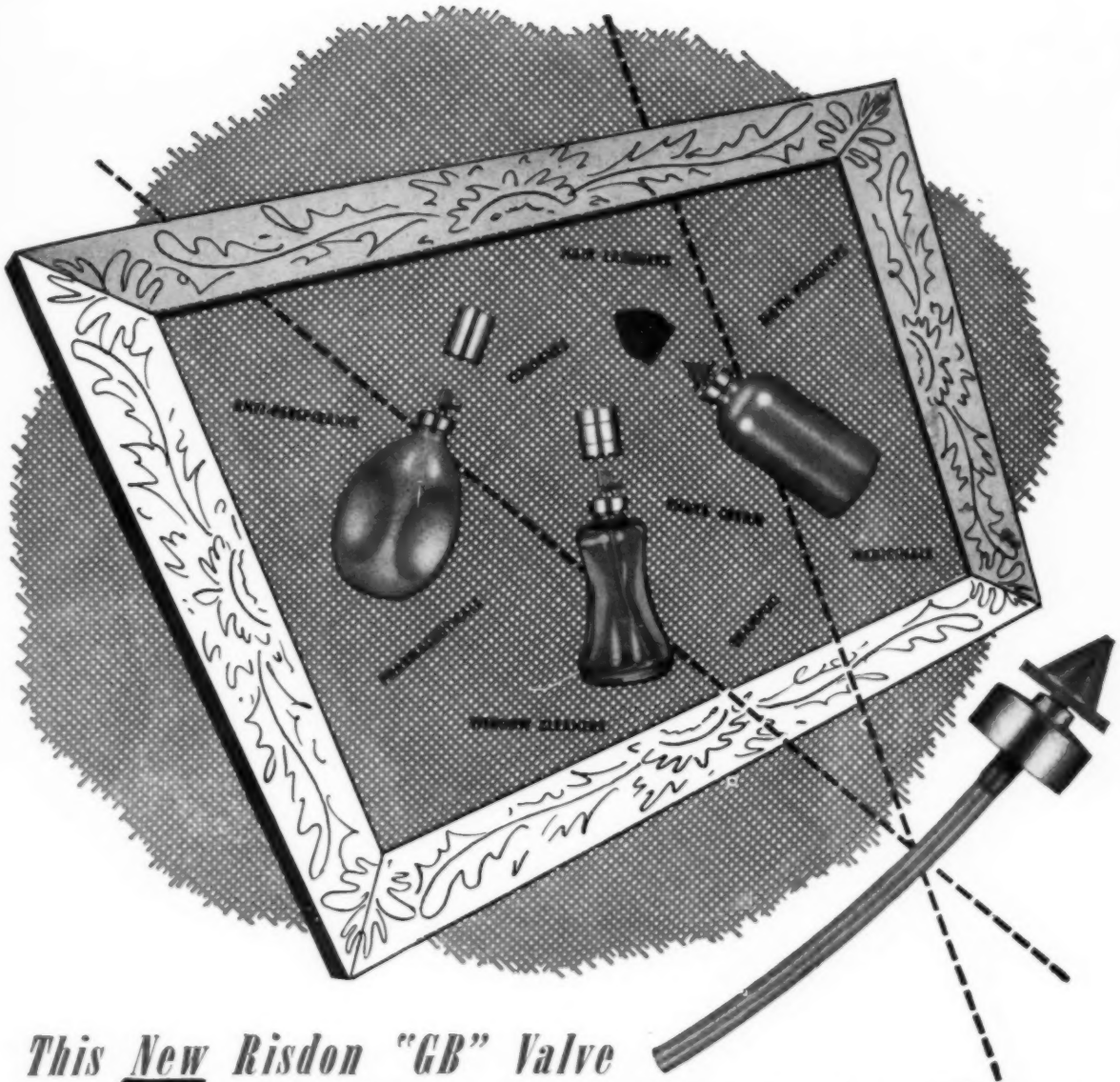
These are the plus features you get from Super-Sealtite.

IVERS UNIT PACKAGING LEE CO.

215 CENTRAL AVENUE NEWARK, NEW JERSEY

Creators of SUPER-SEALTITE — the Package That Never Stops Selling


ANCHOR HOCKING GLASS CORPORATION
LANCASTER, OHIO
CORDIALLY WISHES TO REMIND YOU
THAT IT MAKES
ALL STANDARD STYLES AND SIZES
OF
ANCHORGLASS BOTTLES
OF A SUPERIOR QUALITY
IN
AMBER, GREEN AND CRYSTAL
ALSO A COMPLETE LINE OF
ANCHOR METAL AND MOLDED CLOSURES



This New Risdon "GB" Valve Fits Into The Glass-Aerosol Packaging Picture

No Metal In Contact With Contents....
No Danger of Corrosion Of Valve Components

- In Performance and Appearance The "GB" Valve Is Tailored To Complement Bottle-Packed Spray Products.
- Applicable To Both Coated and Uncoated Bottles.
- Vertical Spray or Horizontal Spray.
- Protective Caps in metal or plastic available in custom-made designs to complement the product package.

Contact Risdon for further details on either the Model "GB" or Model JBR Valve.

RISDON

THE RISDON MANUFACTURING COMPANY • Valve Division
200 Risdon Street, Naugatuck, Conn.

RISDON'S JBR VALVE—KEY TO NEW AEROSOL POSSIBILITIES—NEW QUALITY PERFORMANCE AND STYLING FOR BOTH METAL AND GLASS CONTAINERS.

Makes possible the use of wider range of propellents. Uses all standard types plus "Freon-21", "Freon-22" and methylene chloride.

Sleek all-metal surface and cap enhance packages with a "quality look."

Produces a soft spray cloud of uniformly minute particles. Modified models can be supplied to give larger particle size, when required. Positive cut off.

Write for free descriptive folder.

RI-34

RICHFORD SPILLPROOF* PERFUME FLACONS

THE PURSE SIZE FLACON THAT CHANGED THE PERFUME MERCHANDISING OF A NATION!

THE NEW SQUARE SPILLPROOF

M E M O

SALES TIPS TO REMEMBER FOR BOOSTING YOUR PERFUME SALES

1. The lower unit price of expensive perfumes packaged in Spillproof purse size flacons enables your woman customer to try many different fragrances at relatively small expense. She *actually pays* to sample fragrances . . . once sold she (or the men in her life) will buy larger sizes.
2. Perfume carried daily in Spillproof purse size flacons is consumed far more rapidly than standard size perfumes left on your customer's dresser.
3. The convenient size and lower unit price of perfumes in Spillproof purse sizes entice your woman customer to carry and use both "day" and "evening" perfumes, boosting consumption even more.
4. The lower unit price of perfumes in Spillproof purse sizes enables your woman customer to accept perfume normally beyond her means in her everyday life. She no longer thinks of it as an expensive "evening out" luxury.

RICHFORD CORPORATION
251 FOURTH AVE., NEW YORK 10, N. Y.

1 DRAM size now available for Immediate Delivery

other sizes available soon.

MANUFACTURERS:
Early Response Sensational!
Write today for samples and prices.

packaging news... by HARCORD

"A steady increase in sales", reports Yardley about its brown and buff paper package of Lavendomeal bath salts. We at Harcord like to feel that personal attention is responsible for our six years of service to Yardley.

The trade has already called Revlon's Fire and Ice promotion the most sensational in cosmetic history. This fine product made its bow in a provocative black and red paper canister. We take pride in producing the competitively priced packaging behind this amazing success story.

Attention-getting packaging is often the result of minute attention to details. Nestle-LeMur, another user of Harcord paper canisters, constantly gains wider distribution for its Blue Waltz Dusting Powder with its smartly designed package.

Since the introduction of the Du Barry Cologne Duo by Richard Hudnut more and more women have enjoyed receiving this delightful gift. We think that's a fine testimonial to a good product—well packaged by Harcord.

HARCORD MANUFACTURING CO., INC., *PAPER CANISTERS*

125 Monitor St., Dept. DC-10 Jersey City, N. J. — N. Y. Phone: BArclay 7-5685

You CAN Add an AEROSOL Line . . . and without spending a dime for plant or equipment

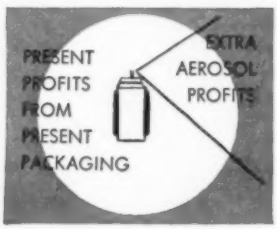
Now is the time to evaluate your product for "push-button" dispensing. Aerosols are booming. New applications for appealing, self-spraying packages are being discovered every day. If you are presently marketing your product in liquid form, the chances are you can also package it as spray or foam. Your product deserves analysis now, so we suggest you arrange with us for a free, comprehensive laboratory report. On the physical side, Continental's complete production, laboratory, and warehousing facilities eliminate any capital expenditure on your part. We do not merchandise packaged items of our own. Our sole operation is filling containers with your products . . . liquid, pressurized, or aerosol. Write today.

PRODUCTION. Continental operates 2 modern plants. Facilities will handle oil and water-base products, and refrigeration, pressure or liquid filling in any quantity. You expand sales . . . but invest nothing.

LABORATORY. Product, container, and valve research plus a tight system of quality control assure perfect product performance. We meet I. C. C. specifications and other regulations for your protection.

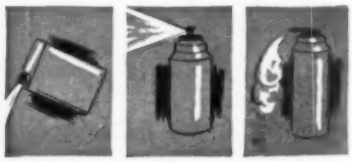
HERE'S HOW TO ENTER THE BOOMING *Aerosol Market* ...USING OUR INVESTMENT

WAREHOUSING. Ample bulk storage space enables us to keep a good supply of your ingredients available at all times. Drop shipping in bulk lots. Use our Midwest plants as central distributing points.



Aerosol packaging may mean a bigger market for you. Aerosols adapt to perfumes, deodorants, medicines, insecticides, household chemical specialties, etc. Get our report now!

CONTRACT AND CUSTOM FILLING



MAIN OFFICE • 123 NORTH HAZEL STREET, DANVILLE, ILLINOIS

CONTINENTAL FILLING CORPORATION

PLANTS • DANVILLE, ILLINOIS — HOBART, INDIANA

Schoettle Case Histories:

true story of a

Purchasing Agent In A Jam

Case History #31 "Mother's Day's 12 days off—we start packing in 6 and there's not a box in the place!" Date is April 29, this year. Phone smoked with frantic pleas of the Purchasing Agent of a major grocery chain*, a Schoettle customer of 20 years. Inventory mix-up had made them skip an annual order for Mother's Day Cake boxes: special glassine laminated cartons, close register 2-color, full cello window. Was ***HE*** "in a jam?"—you bet! Did Schoettle deliver **May** 5?—***right!*** Did thousands of Moms enjoy that wonderful layer cake?—mmmmm, delicious!

Case History #23 This was one of those nice, smooth jobs—million and a half reverse tuck 2-color folding cartons . . . normal delivery date . . . no trouble. Customer, a giant* in the electronics field, had been with us for 26 years. Job was on the press, when . . . ***S.O.S.! Triple*** the quantity! Need 4,500,000—special order! Any extension on delivery? . . . ***NO!*** Gotta have 'em on same date! P.A. was "in a jam"! Sweat and tears, sure, but Schoettle delivered those cartons—all of 'em—***on time!***

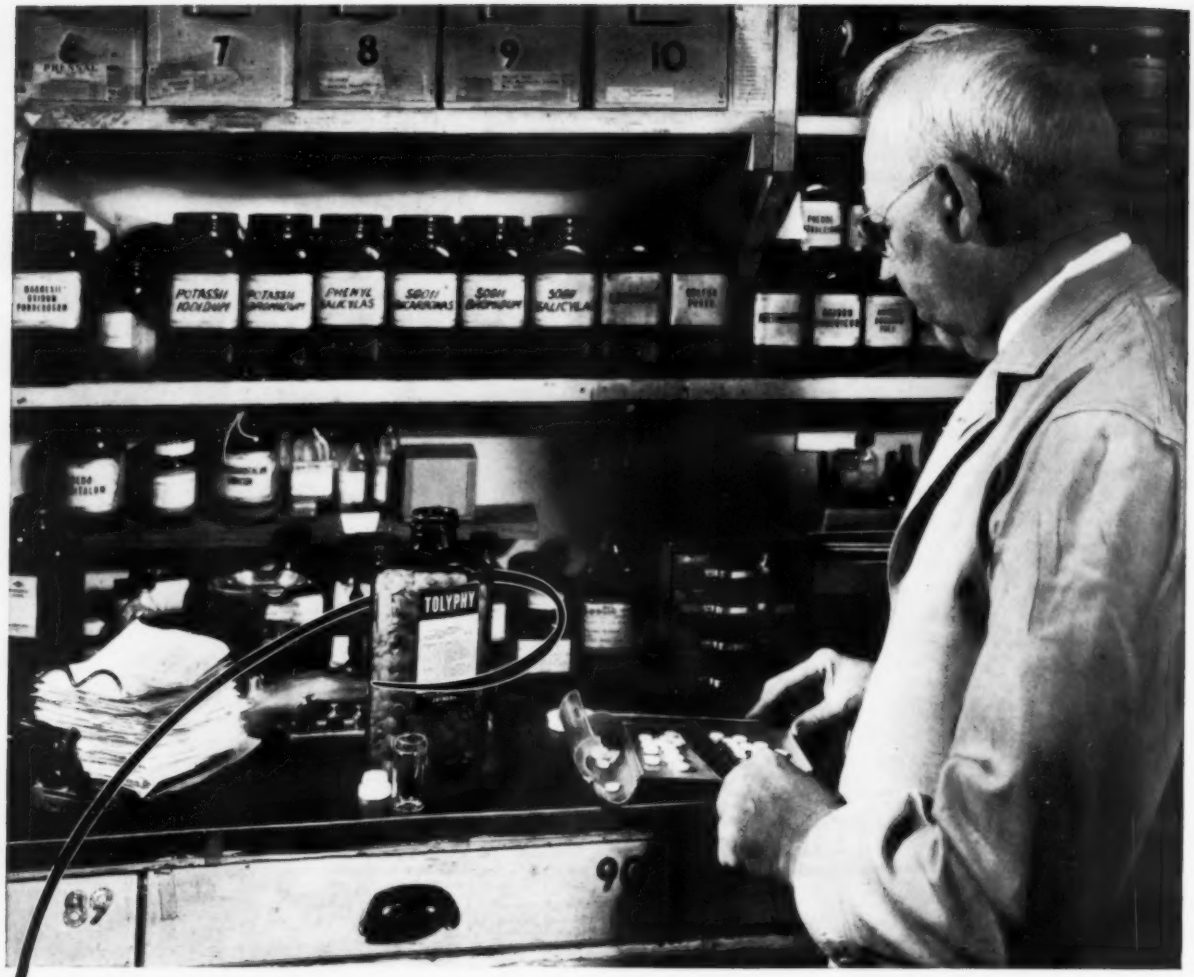
When you're in a jam about paper boxes—'way out on a limb—you want cartons, not excuses! That's the time to call Schoettle—a 9-story building full of people and equipment dedicated to quality cartons and customer cooperation. A 'phone call will bring one of our Packaging Engineers on the double, to investigate, advise—and produce. Try us and see!

*name on request

EDWIN J. SCHOETTLE CO.

533 NORTH ELEVENTH STREET • PHILADELPHIA 23, PENNA.

Designers and Manufacturers of Paper Boxes with Buy Appeal



Always a Serious Matter...

Drug manufacturers ... doctors who prescribe their products ... pharmacists who fill the prescriptions ... all exercise the greatest care in every phase of their work. When it comes to the packaging of their products, many drug manufacturers rely on Crown Closures. They have found through experience that Screw Caps and Lug Caps made by Crown provide dependable protection ... and at the same time work smoothly on the production line.

When you are ready to re-order closures for any of your products, have your Crown Closure Representative explain the advantages Crown Closures offer. Crown Cork & Seal Company, Baltimore 3, Maryland. *World's Largest Makers of Metal Closures.*

CROWN CLOSURES

Approved by millions of housewives

TOLYPHY by *Chimedic* ... A synergistic formula used in the treatment of muscular spasms associated with disease of the joint from inflamation or mechanical derangement. This product of the Chicago Pharmacal Company, Chicago, Illinois, is sealed with Crown Screw Caps and an additional cellulose outer seal.

Our finest quality glass stoppered bottles
for perfume and toilet water

Tester Bottles

Left: No. H-900 (footed)
No. S-7222 elongated stopper

Right: No. H-900
No. S-300 elongated stopper

No. 352

Available in 7 sizes from ⅛ oz. to 8 oz. Supplied plain or with fired-on ceramic labels.

No. 435

Made in 3 sizes only—½ oz., 1 oz., ¼ oz. Available plain or decorated.

CARR-LOWREY GLASS CO.

Designers and manufacturers of fine glass containers

Factory and Main Office: BALTIMORE 3, MD. • New York Office: 40 W. FORTIETH ST. • Chicago Office: 1572 MERCHANDISE MART

BENZALDEHYDE

ODORANT • FLAVORING INGREDIENT • INTERMEDIATE

This well-known Heyden product—synthetic oil of bitter almonds—is in constant demand by leading manufacturers of cosmetics, pharmaceuticals, essential oils and dyes. Heyden Benzaldehyde imparts that distinctive aroma to many soaps, powders, creams and lotions—and it serves equally well as an ingredient in flavoring extracts and confections.

The high purity and uniformity of Heyden Benzaldehyde make it valuable as an intermediate in the production of many organic chemicals. It is available in both N.F. and Technical grades—shipped in 25 and 50 lb. tins, 100 lb. glass carboys, and 425 lb. stainless steel drums.

Other Heyden Products of Interest

Anisoyl Chloride
Anisic Acid
Benzilic Acid
Benzoic Acid
Methyl Benzoate
Ethyl Benzoate
Sodium Benzoate
Tolyl Aldehyde
Resorcinol
Methyl Salicylate
Phenyl Salicylate
Salicylic Acid
Propyl Gallate
Benzoyl Chloride
Benzyl Chloride
Parasepts
Formic Acid
Chlorobenzaldehydes
Chlorobenzoic Acids

Technical information and samples of Heyden Benzaldehyde—or any of the chemicals listed here—are sent promptly on request.

HEYDEN CHEMICAL CORPORATION

342 Madison Avenue, New York 17, N.Y.

CHICAGO • PHILADELPHIA • SAN FRANCISCO • DETROIT • PROVIDENCE

SERVING INDUSTRY THROUGH FINER CHEMICALS

Benzaldehyde • Benzoates • Benzyl Chloride • Bromides • Chlorinated Aromatics
Creosotes • Formaldehyde • Formic Acid • Glycerophosphates • Guaiacols
Hexamethylenetetramine • Medicinal Colloids • Methylene Disalicylic Acid
Neomycin • Paraformaldehyde • Parahydroxybenzoates • Penicillin • Pentaerythritols
Propyl Gallate • Resorcinol • Salicylates • Salicylic Acid • Streptomycin

News . . .

Ricketts Heads Strong Cobb

M. M. Ricketts has been elected president of Strong Cobb & Co., replacing George Miller who resigned the presidency. He had formerly been vice-president of Strong Cobb and general manager of that company's American Chlorophyll division.

Mr. Ricketts has spent his entire business life in the pharmaceutical world, having in recent years been director of sales of three divisions of American Home Products, as well as assistant secretary of Wyeth, Inc., assistant to John J. Kerrigan, president of Merck & Co., and, prior to that, general sales manager of William R. Warner & Co.

M. M. RICKETTS

New Branch Office for S & D

Sharp & Dohme, division of Merck & Co., is constructing a new branch office and warehouse building at 5945 N. Rogers Ave., in the outskirts of Chicago, according to E. W. Metzger, director of domestic branches. The building will be ready for use early in 1954, the present address at the present time being 111 North Canal St.

The new building will provide more generous quarters and will provide more efficient service to customers in an area encompassing most of Illinois, most of Indiana, the eastern half of Iowa and the southern part of Wisconsin.

T. L. Johnson is the Chicago branch manager and C. B. Allison, the district sales manager.

LeFevour Joins Van Patten

Charles F. LeFevour has been appointed product production manager of Van Patten Pharmaceutical Co.

Pfizer Appointments

Carl Lotz, formerly manager of the New York district, Chas. Pfizer & Co., has been appointed northeastern regional manager, and Ivan Mendenhall, manager of the Chicago district, has become central regional manager, according to George Guess, sales manager of Pfizer Laboratories.

John Zea, formerly Washington, D.C. district manager, succeeds Mr. Lotz as New York district manager, and Robert H. Medlin, special hospital representative, succeeds Mr. Mendenhall as Chicago manager.

Sokol, Antibiotic Div. Mgr.

Dr. Herman Sokol has been appointed antibiotic division manager of Heyden Chemical Corp., according to Simon Askin, president. He has been associated with the company since 1944 and has been manager of antibiotic research since 1950.

DR. HERMAN SOKOL

Lind Retires from Dow

Carl O. Lind has retired from his position in the New York sales office of the Dow Chemical Co., according to L. B. Grant, manager of that office. He joined Dow in 1924 and has since been connected with general chemical sales and technical contacts in this field, covering New England, New York State and portions of the Eastern part of Pennsylvania.

Members of the New York sales office recently honored Mr. Lind with a dinner and presented him with a gold watch inscribed with the date of his retirement.

Named Regional Sales Mgr.

William F. Ford has been appointed regional sales supervisor of the southeastern states by Lehn & Fink Products Corp., with headquarters in Charlotte, N. C. He had previously been a sales representative for the company, covering southern New Jersey.

Hilbert Retires—Fritzsche

Fred L. Hilbert, veteran of some 30 years in the essential oil and allied chemical fields, has retired from active service, according to Fritzsche Brothers, with which he had been associated throughout his career.

Heckman in Mathieson Post

William J. Heckman has been appointed director of purchases of Mathieson Chemical Corp., according to Thomas S. Nichols, president. He will be located at the Mathieson executive offices in Baltimore and will be in charge of all of the Corporation's purchasing activities, including those of the E. R. Squibb & Sons division. He had previously been vice-president in charge of purchasing and traffic of Aramco Overseas Co., and previous to that, production manager and director of purchases of William R. Warner & Co. and Richard Hudnut, now Warner-Hudnut, Inc.

WILLIAM J. HECKMAN

Judges for Glycerine Awards

The Glycerine Producers' Association has named the following as judges for the 1953 Glycerine Research Awards competition: Walter J. Murphy, editor, *Chemical & Engineering News;* Dr. Morris Embree, Distillation Products Corp.; and Dr. W. C. Ault, Eastern Regional Research Laboratories, United States Department of Agriculture.

Messner with Doak Pharm.

William A. Messner has been appointed director of advertising and sales promotion of Doak Pharmacal Co., Inc., according to Walter G. Gibbons, president. He was formerly director of promotion of Dome Chemicals Inc.

Doak Pharmacal was recently purchased by New York interest headed by Mr. Gibbons and moved from Cleveland, Ohio, to its present offices at 11 West 42nd St., New York.

New Perfection

DROPPING PARTS

Protect YOUR PRODUCT'S REPUTATION

#1

Non-rolling, extra-depth, Bakelite cap; thick-flange rubber bulb; Saftee-ball glass.

#3

Regular plastic cap; thin flange rubber bulb; semi-blunt glass.

#4

Metal cap; AMEKINE oil-resisting synthetic rubber bulb; blunt glass.

Improved bottle shape. Designed to lie flat for convenient labeling. Front provides ample label space.

Your product's hard-won reputation is risked every time it is taken from the medicine chest. Any inconvenience, such as a non-functioning dropper, will be permanently associated with it. You can remove this risk by entrusting your carefully-compounded preparation to New Perfection dropping parts—painstakingly made of quality materials for the utmost in dependability and cleanliness.

✱ ***We can supply dropping parts to fit your bottles or furnish complete with our own bottles.***

RUBBER BULBS

are supplied in many styles and colors. Oil-resisting AMEKINE synthetic rubber is used for oil preparations; natural rubber is supplied for other products.

CAPS

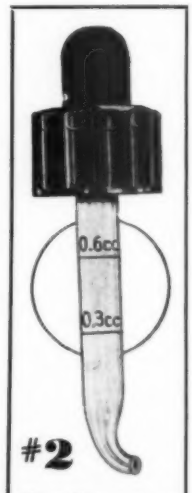
of plastic or metal, can be furnished in a complete range of sizes and colors.

DROPPER GLASSES

are available in a wide variety of styles and sizes. Plain or CALIBRATED in any color to mark specific dosages.

BOTTLES

in an attractive modernistic style in Amber, Blue, Green or Clear glass, are available, complete with dropping parts, in the following sizes: 2cc, ⅛, ¼, ½, 1 and 2 oz.



#2

Non-rolling extra-depth Bakelite cap; thick flange rubber bulb; CALIBRATED special bent glass.

Write for Samples and] Quotations

PENNSYLVANIA
GLASS PRODUCTS CO. INC.

"Glass Goods of the Better Kind"

430 N. CRAIG ST. • PITTSBURGH (13), PA., U.S.A.

Monsanto Exec. Changes

Chester W. Christensen and Arthur P. Kroeger has been appointed to the newly created posts of manager of sales by Monsanto Chemical Company's organic chemicals division, according to John L. Hammer, Jr., general manager of sales.

Tullius C. Tupper and William M. Russell have been promoted to assistant general managers of sales. Mr. Russell will be transferred from New York to St. Louis.

James A. Singmaster, Jr. has been promoted to New York general branch manager, succeeding Mr. Russell, while Jack C. Hutchison will take over Mr. Singmaster's duties as New York assistant general branch manager. James J. Feeks of New York will succeed Mr. Hutchison as branch manager at Cincinnati.

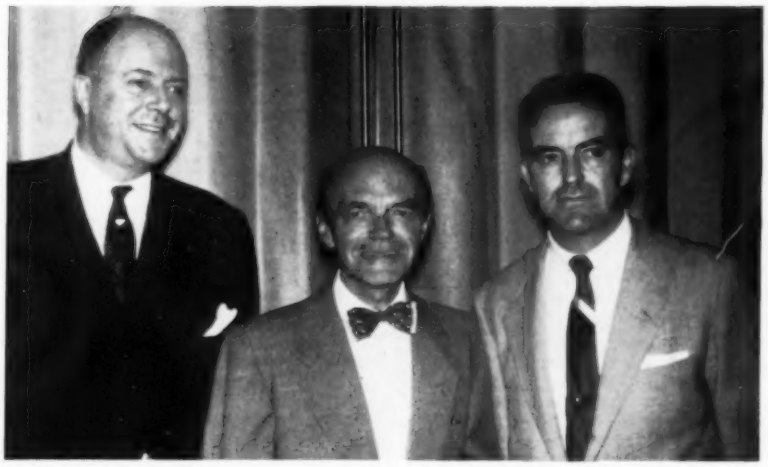
The plasticizers and resins sales department in St. Louis, formerly under the managership of Mr. Tupper, has been separated into two departments—plasticizers sales with Howard I. Armstrong of Boston as manager, and resin materials sales with A. David Evans of St. Louis as manager.

Gavin Joins Gallowhur

T. Edward Gavin has been appointed sales manager of Gallowhur Chemical Corp., according to George Gallowhur, president. He was formerly assistant industrial department manager for B. T. Babbitt.

Sullivan with Gair

Francis J. Sullivan has been appointed a special sales representative for the container division of Robert Gair Co., according to William T. May, Jr., vice-president in charge of container operations. He was formerly with Ottawa River Paper Co.



Stephen L. Mayham, center, executive vice-president of the Toilet Goods Association, who was guest of honor at CIBS Testimonial Luncheon on September 10. H. Gregory Thomas, left, president of Chanel Inc., was toastmaster, and Robert A. Armstrong, CIBS president, gave the introductory speech.

Promoted by Pitman-Moore

Roger L. Hewson has been appointed New England regional manager of Pitman-Moore Co., according to L. W. Welch, general sales manager. He joined the company in 1949 as a medical service representative in eastern Massachusetts and was later appointed sales supervisor in the eastern region, supervising sales activities in the eastern states.

Reynolds in Europe

J. Allen Reynolds, vice-president in charge of operations for the Continental Filling Corp., is in Italy assisting the company of Bombrini Parodi-Delfino in the installation of an aerosol filling line. Continental Filling Corp. has entered into a contract with this firm to act as consultants for the installation of this equipment. Mr. Reynolds will also represent Continental Filling in travels through France, Belgium and other European countries before he returns to the United States in late November or December.

Bush with Haug & Co.

Edward A. Bush has joined Haug & Co., 99 Wall St., New York, as vice-president and secretary. He was formerly with Bush Aromatics division of the Dow Chemical Co. and was 1952 president of the Salesmen's Association of the American Chemical Industry.

The Haug company has been distributors of enzymes and albumen for over 35 years.

Tarplin Named V. P.

E. Mark Tarplin, for the last four years, advertising and promotion manager of Schenley Laboratories, has joined Murray Breese Associates as vice-president.

Rust in Shulton Post

John Beekman Rust, formerly vice-president and research director for the Montclair Research Corp., and president of the Maya Corp., has been appointed research director of Shulton, Inc., according to George L. Schultz, president.

FRANCIS J. SULLIVAN

J. ALLEN REYNOLDS

JOHN BEEKMAN RUST

How to Bag a Sales Increase!

Track down the right fragrance for your product. And you can do it by calling our nearest office. Our experts will gladly search from Abyssinia to Zanzibar for the *one* fragrance that whispers "buy" to your prospects.

Write, or call us—soon!

NAUGAROMES—For various industrial and commercial uses.

SOAPOLS—For bar, paste and liquid soaps.

SHAMPAROMES—For liquid, cream and paste shampoos.

MODERN BASES—For fine perfumes, colognes, toilet waters, toilet preparations, etc.

CREAMODORS—For all types of creams and lotions.

NAUGATUCK AROMATICS

DIVISION OF UNITED STATES RUBBER COMPANY

254 Fourth Avenue, New York 10, N. Y.—701 South La Salle Street, Chicago 5, Ill.

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Sole Distributors for:

JEAN ROURE, PIERRE ZILLER, BRUNO COURT S. A., GRASSE, FRANCE

MANUFACTURERS OF AROMATIC CHEMICALS—IMPORTERS OF ESSENTIAL OILS

Honored by Sharp & Dohme

Ferdinand Klossman, inspector of labels and tablets, Sharp & Dohme, division of Merck & Co.; H. Earl Nack, manager of packaging specifications; and Divers H. Jones, manager of receiving, salvage and general stock, were recently honored by William L. Dempsey, president, for their long service records. Each of the men last month celebrated his 40th year with the company.

William L. Dempsey, left, president of Sharp & Dohme, honoring 3 employees on their 40th anniversaries with company. Left to right, Ferdinand Klossman, inspector of labels and tablets; H. Earl Nack, manager of packaging specifications; and Divers H. Jones, manager of receiving, salvage and general stock.

Heads Takamine Lab.

Katherine McMahon Takamine, executive vice-prsident of Takamine Laboratory, Inc., has been elected president, succeeding the late Eben T. Takamine. Hilda I. Thomas has become secretary.

Homer C. Fritsch, executive vice-president of Parke, Davis & Co., was, at the same time, elected director of the firm.

D&O Donation to Columbia

Dodge & Olcott, Inc. last month forwarded a shipment of 176 bound volumes of valuable chemical magazines to the Columbia University Chemistry Library. They were donated from the shelves of the company's newly installed Technical Library in the Dodge & Olcott Building at 180 Varick St., New York, and included the Berichte der deutschen chemischen Gesellschaft, the Journal of the Chemical Society, and the Proceedings of the American Pharmaceutical Society.

Smith Joins A. H. Robins

William Allen Smith has been appointed plant superintendent of the A. H. Robins Co., according to E. Claiborne Robins, president. He had previously been with the Valentine Co. in the same capacity.

WILLIAM ALLEN SMITH

Mitchum E. Warren, vice-president of Golden Peacock, Inc., and Ruth Ann Parker, Miss Tennessee of 1953, at opening of $1-million county hospital in Paris, Tenn. Mr. Warren was chairman of building committee. Hospital was named Hospital of the Month in July by Modern Hospital Magazine.

Ruegg, Pfizer Dist. Mgr.

Fred W. Ruegg, Jr., has been appointed district manager of Pfizer Laboratories in St. Louis, according to George Guess, sales manager. He joined the firm earlier this year as a special hospital representative.

Roddey with Alrose Chem.

Glenn Roddey, formerly with Atlas Powder Co. and the Ninol Laboratories, recently joined the Alrose Chemical Co. and is now attached to the New York office.

Mars Promoted by Ansul

C. Victor Mars has been named vice-president in charge of research and development for Ansul Chemical Co. He has been with the firm 22 years.

Davis Promoted by Ayerst

William L. Davis, Ayerst, McKenna & Harrison Limited, has been appointed divisional sales manager of the Midwestern area, with headquarters in Chicago, according to John W. Black, sales manager. He had formerly been district manager.

Named Rexall Directors

Malcolm Smith, Los Angeles, and Thomas Wolfe, Pasadena, Calif., were elected directors of Rexall Drug Inc. at a directors' meeting on September 16 in New York, according to Justin Dart, president. Mr. Smith will also serve on the Corporation's executive committee.

With Inland Alkaloid Co.

J. G. Van Nortwick, formerly senior vice-president and director of J. L. Hopkins & Co., has been appointed field sales manager of the Inland Alkaloid Co. and William E. Martin Co. He is a past vice-president of the American Pharmaceutical Manufacturers Association.

J. G. VAN NORTWICK

Calif. Cosmetic Meeting

The California Cosmetic Association held its first meeting of the 1953-54 schedule at the Beverly Hills Hotel on September 18. New members were officially welcomed into the Association by Arnold L. Lewis, president.

J. M. Brinkerhoff, chairman of the event, introduced representatives of Lloyd's of London, who conducted an interesting and informative panel discussion on Products Liability Insurance in its coverage of cosmetics and toiletries. The three insurance executives, authorities in varied phases of products liability, were James H. Collins, Victor Montgomery General Agency, Inc.; Arthur M. Morris, Marsh & McLennan Co.; and Walter M. Lefler, Toplis & Harding, Inc.

Schenley Moves to N. Y.

Schenley Laboratories has transferred its national sales offices from Lawrenceburg, Inc., to New York City, according to Arthur F. Gormley, vice-president in charge of sales. New sales headquarters are at 350 Fifth Ave.

The company will continue to service its distributors by two supply depots—one in New York for the eastern half of the country, and a western depot at 2010 Judah St., San Francisco, for states west of, and including, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma and Texas.

Bristol-Myers Exec. Changes

E. Lloyd Bernegger, formerly vice-president in charge of sales, has been elected executive vice-president of the Bristol-Myers Products division. He will continue to direct sales activities.

Walter P. Lantz, formerly executive assistant to the president of the Products division, has been elected vice-president and will be director of market research.

Andre Firmenich, senior partner and commercial director of Firmenich et Cie., and his yacht helmsman, Louis Noverrez, right, being greeted by Charles G. Bryan, center, president of Firmenich, at Idlewild Airport. They have been participating in yacht races during September and October at Seawanhaka Corinthian Yacht Club, Oyster Bay, L. I. M. Firmenich is 6 metre international class European champion and has been Swiss champion since 1932. His yacht is Yllian VIII.

Somogyi Receives Award

Dr. Machael Somogyi, one of the world's leading biochemists, and a pioneer in the study of sugar metabolism, was presented with the 1953 Ernst Bischoff Award of $500, at the fifth annual meeting of the American Association of Clinical Chemists on September 10 at the Conrad Hilton Hotel, Chicago. In addition to the monetary award, Dr. Somogyi received a bronze medal and scroll.

He has been in charge of research and chemical laboratories at the Jewish Hospital of St. Louis since 1926.

Mackenzie with Inland

William P. Mackenzie has been appointed to the sales staff of the Inland Alkaloid Co. He will serve the pharmaceutical and drug manufacturers in Metropolitan New York, in addition to New Jersey and Philadelphia.

Rosen with Aceto Chemical

Irving Rosen, formerly with Dura Commodities Corp., has joined the staff of Aceto Chemical Co. as general executive assistant.

Ives Named Pres., Haelan

Warren A. Ives, a former executive of the F. W. Woolworth Co., has been elected president and a director of Haelan Laboratories, according to the Honorable Harry Shapiro, chairman of the board of Haelan. This will permit Mr. Shapiro to relinquish the office of president, which he has been filling for an interim period. He will continue as chairman of the board of directors.

Mr. Ives' extensive experience in merchandising is expected to accelerate the previous plans of the company for a broad expansion of its merchandising and manufacturing activities in the pharmaceutical and cosmetics fields. Haelan Laboratories was formerly the Bowman Gum Company.

E. LLOYD BERNEGGER

WALTER P. LANTZ

WARREN A. IVES

Orange Blossom "V"

BY ALBERT VERLEY & COMPANY

—a fresh, romantic fragrance that is yours to use freely, without prohibitive cost

—TURN THE PAGE

Orange Blossom "V"

BY ALBERT VERLEY & COMPANY, INC.

—a veritable replica of the living flower, and a worthy substitute for the costly natural absolute

To the French, masters of the language of perfumes, Orange Blossom stands for virginity. From this age-old symbolism comes our American association of the flower with the climax of romance — the wedding ceremony.

To capture that fresh, romantic note and recreate it has long been the goal of the perfumer and the aromatic chemist, and a particular interest of the staff of Albert Verley & Company.

In Orange Blossom "V," this goal has been achieved. Here is an aromatic creation that is truly worthy to replace the natural raw material in your most significant formulas. You can use it as a complete substitute for the natural absolute in all forms of perfumery — with confidence that results are a credit to yourself and to your house. It gives you a conclusive answer to natural material shortages and excessive costs.

Orange Blossom "V" has made a place for itself, along with Jasmin Blossom "V" and other modern replicas, as a permanent part of the perfumer's array of primary odors. Write today for a working sample and prices.

ALBERT VERLEY AND CO., INC.
466-472 W. Superior St., Chicago 10, Ill.
114-116 E. 25th St., New York 10, N. Y.

MEFFORD CHEMICAL CO.
1026 Santa Fe Ave., Los Angeles 21, Calif.

ALBERT VERLEY AND CO., INC.
222 Front St., East, Toronto, Ontario

Representatives in all principal cities throughout the world.

Where Your Dollars Have More Scents
Albert Verley
AND COMPANY, Inc.
Headquarters for Odor Appeal

Synthetic Aromatic Products and Organic Isolates • Synthetic Flower Oils and Aromatic Bases • Bouquets and Finished Compositions

STANLEY I. CLARK

JOHN L. BRICKER

E. J. ROSENBERG

DCAT Elects Officers

Stanley I. Clark, vice - president, Sterling Drug Inc., was elected chairman of the Drug, Chemical and Allied Trades Section of the New York Board of Trade at its 63rd annual meeting. Other officers, in addition to Mr. Clark, who will serve during the next fiscal year are: Claude A. Hanford, president, Pharmaco, Inc., as vice-chairman; Hugh S. Cresson, McKesson & Robbins, Inc. (re-elected), treasurer; and Helen L. Booth, who was re-elected as secretary. James G. Flanagan, vice-president, S. B. Penick & Co., was re-appointed counsel. The DCAT met at Pocono Manor Inn, Pocono Manor, Pa., from September 24 to 26, during which time the retiring chairman, Lloyd I. Volckening, president, the Ivers-Lee Co. was elected section representative to the board of directors of the New York Board of Trade.

The personnel of the new executive committee, exclusive of officers, elected at the business session on September 25 includes: Ralph A. Clark, J. T. Baker Chemical Co.; Harold F. Cummings, Vitamerican Oil Corp.; Donald S. Cushman; Leonard Dalsemer, the Lord Baltimore Press; James Day, the Dow Chemical Co.; Dudley Dunlop, Mallinckrodt Chemical Works; J. David Hayden, R. P. Scherer Corp.; William W. Huisking, Chas. L. Huisking & Co.; George S. McMillan, Bristol-Myers Co.; W. Boyd O'Connor, Ayerst, McKenna & Harrison, Ltd.; W. M. Russell, Monsanto Chemical Co.; Wm. J. Schieffelin, III, Schieffelin & Co.; F. M. Schwemmer, Ruthrauff & Ryan, Inc.; Fred G. Singer, E. I. du Pont de Nemours & Co.; Sydney N. Stokes, Merck & Co.; and Stephen F. Urban, E. R. Squibb & Sons.

Olson Joins Pfizer

Dr. John A. Olson has been appointed a member of the medical service staff of Chas. Pfizer & Co., Inc.

Promoted by Colgate

John L. Bricker has been promoted to assistant sales manager in the home office sales department of Colgate-Palmolive-Peet Company's toilet goods division, according to J. A. Straka, executive vice-president. He joined Colgate in 1949 in the syndicate sales department.

Peacock Sultan Liquidated

John F. Hershner has resigned as president of the Od Peacock Sultan Co. and member of the board of directors. The company's drug business has been sold, and other of the firm's assets have been liquidated.

Ridges, V.P., Penick

Robert P. Ridges, formerly vice-president and controller of Alexander Smith, Inc., has been elected vice-president of finance, S. B. Penick & Co., according to S. B. Penick, Jr., president.

Names Pres., Balenciaga

E. J. Rosenberg has been appointed president of Balenciaga Perfumes, Inc., as part of a new expansion program. He will head the American firm responsible for the sale and promotion of Balenciaga perfumes in the Western Hemisphere.

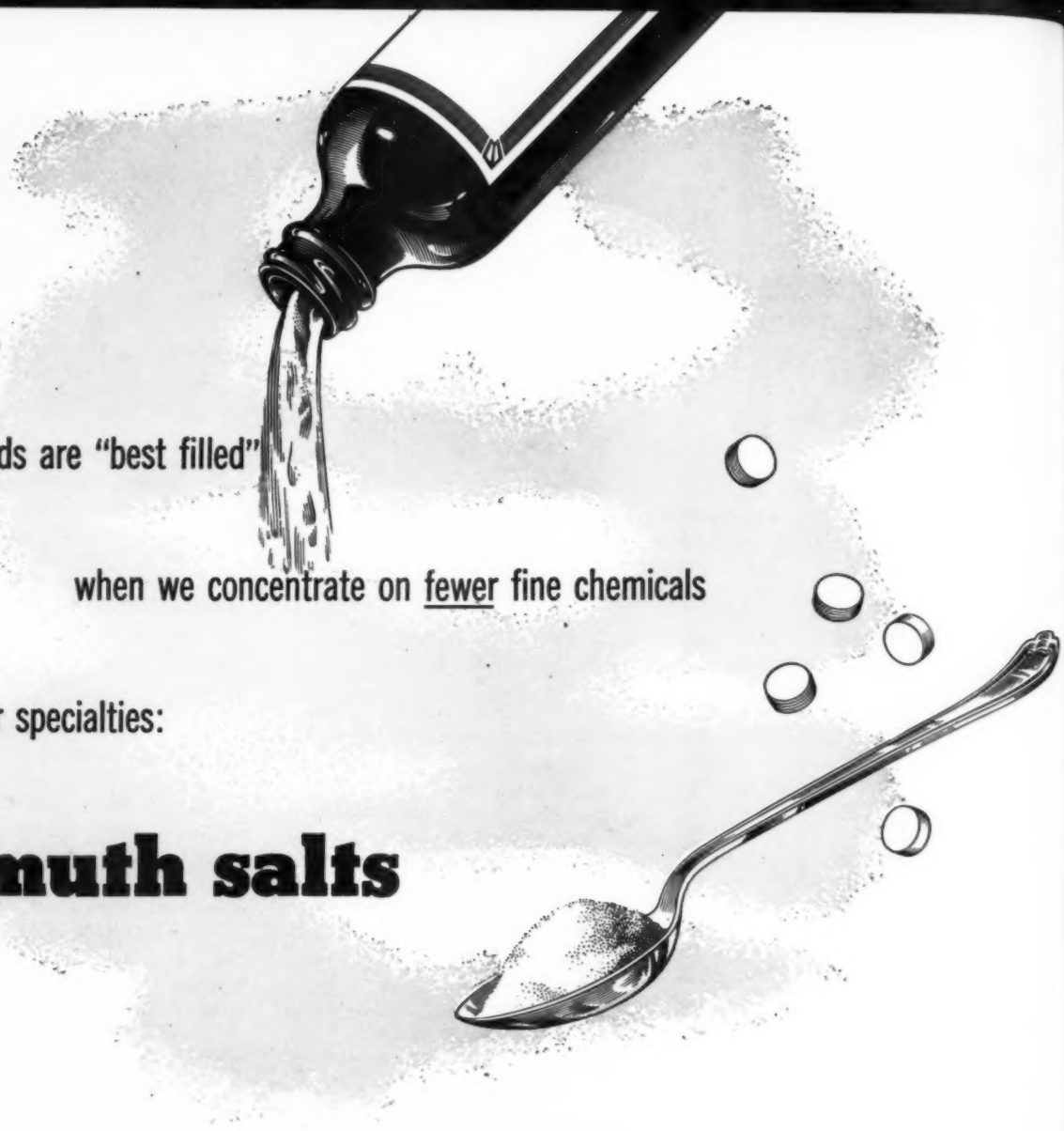
Promoted by Pitman-Moore

George Schilling has been promoted to the newly created position of technical advisor at Pitman-Moore. He joined the firm as a bacteriologist in 1936 and has been assistant director in charge of production for nine years.

Wiegand Wins Golf Trophy

C. Monroe Wiegand, Avon Products, Inc., won the BIMS Martin F. Schultes Memorial Trophy, with a net score of 68, in the tournament held at the Wykagyl Country Club, New Rochelle, New York, on September 22.

Recent dedication of old drug store restoration in Cooperstown, N. Y. John C. Bird, coordinator, new products development, Lederle labs., examines old corking instrument for driving corks into bottles. Janet R. MacFarlane, Curator, left, and Dr. Louis C. Jones, director, New York State Historical Ass'n., and Farmers' Museum, look on.



Your needs are "best filled"

when we concentrate on fewer fine chemicals

One of our specialties:

bismuth salts

How can we "best fill your fine chemical needs" and help you maintain the precise standards you as a pharmaceutical manufacturer demand?

By producing many fine chemicals—or by concentrating on a few, making sure that each of them fits the job you have for them?

We have always felt that you could be served better, and in more ways, if we followed the latter course.

Let us see how you *gain* by using one of our specialties: Bismuth Salts.

Bismuth Subcarbonate, for example. Is your antacid preparation a liquid, a powder, a tablet? You can choose from Baker a Bismuth Subcarbonate that will "best fill your specific needs." We make *four* different densities.

Baker's Bismuth Subcarbonates, and Baker's Bismuth Nitrate, Subgallate, Subnitrate, Oxychloride, and Subsalicylate, are made from the purest grade of bismuth metal. A reagent grade of acid is used for the initial reaction. Color of these chemicals is exceptionally stable under exposure to actinic light.

Samples and prices will be forwarded gladly upon request. Write to *Fine Chemical Division,* J. T. Baker Chemical Co., Phillipsburg, New Jersey.

Baker CHEMICAL

Baker Chemicals

REAGENT • FINE • INDUSTRIAL

JULES BAUER

EDWARD H. FRINK

JAMES GRAY

Bauer in D&O Post

Jules Bauer has been appointed to the newly established post of coordinator of sales by Dodge & Olcott, Inc. He will work closely with D&O Vice-president, C. O. Homan, and Paul Sperry, sales manager.

Nat. Aniline Expansion

National Aniline division, Allied Chemical & Dye Corp. is now occupying quarters in a new building at 1216 Spring St., N. W., Atlanta, in order to accelerate technical and sales service to customers in the Southeast.

John Boykin, previously resident representative in Atlanta, has been named branch manager.

The company's new sales-service facilities in Atlanta include a fully-staffed application laboratory. With this expansion, National Aniline now serves the South through a network of seven offices at Richmond, Greensboro, Charlotte, Columbus, Ga., Atlanta, Chattanooga and New Orleans.

Sammer Marks 30th Year

Hans Sammer, advertising manager of the Huisking Co., and sales manager of Peder Devold Oil Co. division, was tendered a luncheon on September 23 by executives of Chas. L. Huisking & Co., to celebrate his 30 years of association with the organization.

Coming from Vienna in 1923, Mr. Sammer started as assistant bookkeeper, later joining the export department. During the last 14 years, he has been sales manager of the Oil Department, now the present Peder Devold Oil Co. division.

Sandburg Named V.P.

R. W. Sandburg, controller of the Andrew Jergens Co., was elected a regional vice-president of the Controllers Institute of America at the 22nd annual meeting on September 28 in New York.

Frink Elected President

Edward H. Frink, treasurer, Sharp & Dohme, division of Merck & Co., was elected president of Tax Executives Institute, Inc., on September 21 at its 8th annual conference at the Bedford Springs Hotel, Bedford, Pa.

On Perfume Sales Staff

Pierre T. Deleamont has been appointed to the perfume sales staff of van Ameringen-Haebler, Inc., and will serve the cosmetic and perfume industry from the home office of the company in New York.

Consulting Chemists Anniv.

The Consulting Chemists and Chemical Engineers, Inc. will celebrate its 25th anniversary on October 27 at the Belmont Plaza Hotel, New York. Guests are welcome; participation is not restricted to members.

Gray Heads Rapidol Corp.

James Gray has been elected president of the Rapidol Distributing Corp. of New Hyde Park, N. Y.

Nenstiel, Gair Rep.

William H. Nenstiel has been appointed West Coast sales representative for all types of Gair folding cartons, according to J. C. Hendricks, general sales manager of the folding carton division, Robert Gair Co. He has opened an office at 385 East Green St., Pasadena 1, Calif.

P-D Honors 27 Employees

Parke, Davis & Co. honored 27 employees who recently completed 25 years with the firm's Detroit operations at the second annual Service Award Banquet held at the Veteran's Memorial Building on September 21. Each of the 14 men and 13 women received gold watches from Homer C. Fritsch, executive vice-president.

J. C. Leppart, president of E. R. Squibb & Sons, center, congratulating Rease Inge, right, Atlanta regional sales manager, on behalf of his unit which won Squibb Trophy for sales leadership in U. S. Taking part in official presentation at Atlanta is W. L. Arscott, Squibb vice-president and sales manager.

INDUSTRY ADVERTISING *and a* T. G. A. SERVICE

MODESTY in its advertising claims has—fortunately—never been a characteristic of the toilet goods industry. Its members on the whole have always followed the good American industrial pattern of making the best product they could devise—and then telling the world that it was just that—the best product that could be made for its particular purpose. We believe that policy is to be commended and encouraged.

HOWEVER, A POLICY of publicizing your virtues can quite understandably lead to excesses. Such excesses had much to do with the passage of the Federal Food Drug & Cosmetic Act in 1938, and the Miller-Tydings advertising control bill in the same year. Those Acts fortunately have been of inestimable benefit to the industry in many ways, even though some minor industry sins contributed to their enactment.

THE RIGHT TO PRAISE your product—to "Tell the World!"—can, however lead to abuses. It is possible to wax over-enthusiastic. Such over-enthusiasm, particularly at this time, may lead to grave consequences. We can destroy our industry by claiming too much for its products.

THAT IS WHY THE TOILET GOODS ASSOCIATION maintains its copy review service, conducted by its Board of Standards. Members—and at times others—may submit to the Board advertising and labeling copy in advance of publication. The Board, consisting of the T.G.A. Scientific Director, Executive Vice-President and General Counsel, reviews it and then approves, suggests, changes or rejects it depending upon the capacity of the copy to get its sponsor into regulatory trouble.

IN NOT ONE INSTANCE has a piece of copy which has had T.G.A. Board of Standards approval, ever been questioned by F.D.A. or F.T.C., and we have been doing this work for more than fifteen years. Think of the headaches that record has saved members whose copy has gone through Board of Standards hands since 1938!

THE TOILET GOODS ASSOCIATION, INC.
9 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

Further advertisements in this series will present to the industry what we feel will be an interesting picture of your Association's activities. Please read them and get to know us better.

Norwich Plans Research Lab.

The Norwich Pharmacal Co. has made plans for the construction of a million-dollar research building, according to Melvin C. Eaton, president, which will contain 50,000 square feet of operating space. It will be erected next to the company's 3-year-old chemical manufacturing plant north of the city of Norwich, N. Y., with construction expected to be completed by November, 1954.

Allied to Buy Plaskon Div.

Arrangements have been completed for the purchase for cash of the Plaskon division of Libbey-Owens-Ford Glass Co. by Allied Chemical & Dye Corp. Plaskon, under Libbey - Owens - Ford management since acquisition of the original properties in 1940, has been successfully developed through an intensive research program into a producer of a wide line of plastic molding compounds and resins having many commercial, industrial and military uses.

Allied Chemical plans to operate Plaskon as a unit of its Barrett division.

Instead of further expansion of this division, which would require substantial investment in chemical plants and equipment to produce necessary raw materials, Libbey-Owens-Ford is directing its activities to fields more closely integrated with glass, its major product.

Graham Heads Baxter Labs.

William B. Graham, vice-president and manager of Baxter Laboratories, has become president, succeeding Dr. Ralph Falk who has resigned. Dr. Falk, a founder of the company, will continue to be the corporation's chief executive in the office of chairman. Naurice M. Nesset, formerly vice - president in charge of production and research, has become executive vice-president.

Dolmetsch with Mathieson

Carl R. Dolmetsch, formerly with Celanese Corp. of America, has joined Mathieson Chemical Corp. in an executive capacity, according to Thomas S. Nichols, president.

Name Canadian Agency

Ogilvie Sisters have appointed the Lloyd Wood Co. Limited, 64 Gerrard St., East, Toronto, as its sole selling agency in Canada.

Daleo with Richford

Frank J. Daleo, recently with the J. W. Wilson Glass Co., and before that, with the Armstrong Cork Co., has become associated with the Richford Corp.

Sketch of $1.5 million research building of the Norwich Pharmacal Co. to be constructed adjacent to company's chemical manufacturing plant. Construction is expected to be completed by November, 1954.

Pkg. Machinery Elections

The following officers were elected by the Packaging Machinery Manufacturers Institute at its 21st annual meeting, September 20-23, at Skytop, Penna.: Robert T. Foreman, R. A. Jones & Co., who succeeds Edwin H. Schmitz, Standard-Knapp, as president; Mrs. Helen Horix Fairbanks, president, Horix Manufacturing Co., as vice-president; and Tom Miller, vice-president, Package Machinery Co., vice-president.

Three new directors were elected: Horace C. Baker, Hudson-Sharp Machine Co.; W. B. Bronander, Jr., Scandia Manufacturing Co.; and Mills W. Waggoner, Better Packages, Inc. They succeed S. C. Markley, Comas Machine Co.; E. A. Oliver, Economic Machinery Co.; and Edwin H. Schmitz.

Fritzsche Sales Changes

Robert W. Montgomery has been transferred from the Philadelphia branch of Fritzsche Brothers to the company's headquarters at New York. Robert M. Hughes has replaced him in Philadelphia.

Other new representatives include Frank J. McNamara, who will travel out of the New York office, and Parker Schwamb, who will assist Stanley Crouch, Los Angeles staff manager.

Opens Phila. Office

Package Machinery Co. has opened a Philadelphia office at 29 Bala Ave., Bala-Cynwyd in order to meet increased demand and to better serve customers in Eastern Pennsylvania, Eastern Maryland, Delaware and Southern New Jersey.

The new Philadelphia office is under the management of Thomas L. Jefferson, who has been a member of the company's sales staff for many years and has wide experience in the packaging field.

Ernest Gottlieb Eberhardt

Ernest Gottlieb Eberhardt, Eli Lilly & Co.'s first pharmaceutical chemist, and a former honorary president of the American Pharmaceutical Association, died August 31 at his home in Indianapolis. He was 88 years old, having retired from the company in 1945, after 59 years of service.

He received recognition from the A. Ph. A. at its annual meeting in Atlantic City in 1950 for a lifetime of service to the pharmaceutical industry.

Mr. Eberhardt joined Lilly in 1886 and worked with Colonel Eli Lilly, the company's founder, setting up a department for assay and control tests. This department now consists of the Lilly research and control units.

He is survived by six children.

Jasper P. Scott

Jasper P. Scott, executive director of operations planning for Eli Lilly & Co., died September 8 at his home in Indianapolis. He was 55 years old.

He had been associated with the company for 33 years and was credited with contributions to the development of insulin, liver and pituitary extracts, and vitamin products. His first position had been as a research chemist, but Mr. Scott later became assistant director of research development, director of research contacts, director of functional co-ordination, and director of industrial engineering, before his last promotion in 1952.

Karl Mallard

Karl Mallard, 42, president of the American Pharmaceutical Manufacturers Association and of Mallard, Inc., died on September 3. He succeeded his father, A. M. Mallard, as head of the Mallard company in 1939.

He is survived by his wife, Grace C., and two sons, Thomas and Karl Mallard, Jr.

DOW

WOMEN PREFER LOTIONS MADE WITH PROPYLENE GLYCOL, U.S.P.

DOW propylene glycol, U. S. P., will give your lotions that popular soothing effect and it can also lower your manufacturing costs

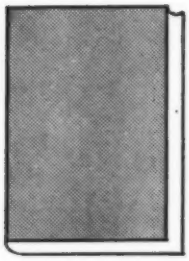
It's the soothing and softening effect without residual stickiness that determines a woman's preference when she buys a lotion. You can easily put your lotion on her preferred list by altering your formula, probably only slightly, to use propylene glycol, U.S.P.—with even a possibility of replacing a more expensive ingredient. Product improvement with lower cost sounds like a combination well worth investigating, doesn't it?

Propylene glycol can be used with all three types of cosmetic lotions—either nonalcoholic, mildly alcoholic or strongly alcoholic.

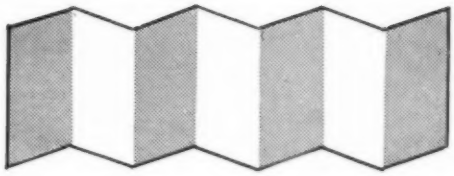
Dow propylene glycol, U.S.P., offers similar advantages in many other cosmetic applications, and in the pharmaceutical industry as well. For your free sample of propylene glycol, U.S.P., and further information, write to THE DOW CHEMICAL COMPANY, Midland, Michigan, *Dept. OC-3-31A*.

you can depend on DOW CHEMICALS

DOW



Trade Literature



Drug and Cosmetic Manual

Glyco Products Co., 26 Court Street, Brooklyn 1, N. Y., has issued a Drug and Cosmetic Manual—a 20-page booklet giving interesting information and formulas for making a wide range of products.

Sequestrene Booklet

Alrose Chemical Co., Box 1294, Providence 1, R. I., has issued a new bibliography on Sequestrene (ethylenediamine tetraacetic acid). This 8-page pamphlet covers the literature on this subject through 1952.

Actamer Booklet

Organic Chemicals Division Monsanto Chemical Company, 1700 South Second Street, St. Louis, has issued a 20-page bulletin in Actamer, a bacteriostat for soaps and skin preparations. Data are presented on what is said to be one of the most exhaustive test programs ever conducted on a skin application program. Tables show activity of Actamer against a wide range of bacteria and fungi, suggesting beneficial effects in treatment and prophylaxis of disorders like acne, minor skin infections and athlete's foot.

Lanogels Bulletin

Product Bulletin No. 46 on Lanogels (modified lanolins described as polyoxyalkylene lanolins) has been issued by Robinson-Wagner Company, 110 East 42 Street, New York 17. These products are water-soluble and sold in 50 per cent aqueous gel form so as to facilitate removal from containers. There are two forms: Lanogel 21, and Lanogel 31. The bulletin gives specifications and describes suggested uses in the products of this industry.

Veegum in Drugs and Cosmetics

Six cosmetic and eight pharmaceutical formulas are included in a new bulletin issued by R. T. Vanderbilt Co., 230 Park Ave., New York 17. This 8-page booklet, Bulletin No. 53, gives extensive information on the use of Veegum in these preparations.

Stokes Tablet Presses

A revised edition of a catalog describing the complete line of Stokes single punch and rotary tabletting presses has been issued by the F. J. Stokes Machine Company, 5500 Tabor Road, Philadelphia 20.

Animal Nutrition

Proteins and Amino Acids in Animal Nutrition, by H. J. Almquist, third edition, is available from U. S. Industrial Chemicals Co., 120 Broadway, New York 5. This is quite a comprehensive piece of work.

Fatty Alcohols

M. Michel and Company, 90 Broad Street, New York 4, are distributing an 8-page booklet entitled Possibilities with Fatty Alcohols. It tells how to use Cachalot brand cetyl, oleyl, and stearyl alcohols in various applications.

Crystal Urea Booklet

Nitrogen Division Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, has issued an 8-page booklet on Crystal Urea.

Commercial Solvents Chemicals

Commercial Solvents Corporation, 260 Madison Ave., New York 16, has issued a 4-page bulletin giving complete information on the company's industrial chemicals and market development products.

Cellulose Acetate Booklet

A new edition of a basic technical booklet about the properties and uses of cellulose acetate is available from Hercules Powder Company, Wilmington, Del. This 36-page booklet, with tables and charts, gives very complete information on the wide range of uses of this material.

Plax Carboys

Plax Corp., West Hartford, Conn., has issued an 8-page illustrated brochure designed to acquaint packagers, handlers or users of liquids with the broad advantages of its unbreakable 6½ and 13 gallon Plaxpak polyethylene carboy.

Industrial Odorizing

Polak & Schwarz, 667 Washington Street, New York 14, have issued an 8-page booklet entitled Perfume Specialties for Industrial Applications. The booklet lists a number of outstanding mask odors, neutralizers, odorants, and industrial perfume oils suitable for various products. Recommendations for their use, as well as solubility and other technical data, are included.

To help you formulate finer products

CELANESE PROPYLENE GLYCOL U.S.P.

A new volume source for propylene glycol U.S.P. will be of immediate interest to the toilet goods and pharmaceutical industries.

Perfumers, cosmetic chemists and pharmaceutical chemists will appreciate the unusual odor-free quality and blandness of Celanese Propylene Glycol U.S.P.

For your evaluation sample, return coupon below or write: Celanese Corporation of America, Chemical Division, Department 586-J, 180 Madison Avenue, New York 16, New York.

Celanese Corporation of America
Chemical Division, Dept. 586-J
180 Madison Avenue, New York 16

Please send me: Celanese PROPYLENE GLYCOL U.S.P. Sample ☐ Specifications ☐

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COMPANY_____

ADDRESS_____

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Celanese* CHEMICALS

*Reg. U. S. Pat. Off.

Readers' Questions

Foaming Tooth Paste: *Please send me information on methods for increasing the foaming properties of tooth pastes. Saltillo.*

The foaming properties of a tooth paste may be increased by using a highly foaming soap, such as coconut oil soap, as the detergent in the tooth paste formula. Certain synthetic detergents may also be used to supply the foaming properties.

Hair Color Restorer: *Can you give me a formula for dying the hair black? I want something that is not based on silver nitrate. Havana.*

The following preparation, which contains a lead salt and therefore carries an element of danger, may be in line with what you want. It is a rather old fashioned preparation consisting of:

Sulfur	**5.0 per cent**
Lead acetate	**4.0 " "**
Glycerine	**5.0 " "**
Water	**80.5 " "**
Perfume	**0.5 " "**
Alcohol	**5.0 " "**

Rub up sulfur with glycerine to make a paste. Dissolve the acetate of lead in the water, add sulfur and the perfume mixed with the alcohol.

Covering Castor Oil Taste: *I should like your advice on the problem of masking the odor and taste of castor oil for oral use. I have tried emulsification and I find that I can prepare a nice emulsion with good stability and very little tendency to cream, but the problem of masking the odor and to some extent the taste of the oil, has not been solved. Can you give me additional information with particular reference to covering the odor and taste? Staunton.*

This is a problem which a number of people have tackled. I am not quite certain as to what advantage there would be in emulsifying the oil other than the creation of finer dispersion and more ready utilization. It is still necessary to cover the odor and flavor, as you have found out. If you want to continue with emulsions, I would suggest that you contact any one of the several perfume houses that advertise in Drug and Cosmetic Industry. Almost all of them maintain flavor services and they may be able to give you a ready answer in the form of a prepared mixture. Of course, from time to time various methods have been used to disguise castor oil. The following is a typical example:

Finely powdered roasted coffee	**10 parts**
Powdered sugar	**20 "**
Castor oil	**20 "**

Cough Drops: *We are interested in obtaining literature on the formulation and manufacture of medicated cough drops and would appreciate information on this subject. San Francisco.*

Cough drop manufacture is essentially a candy making process and considerable information on such products can be found in the confectionery magazines and books. However, I can inform you that a typical formula for making a hard candy cough drop has been given as follows:

Granulated sugar	**100 lb.**
Water	**4 gal.**
Flavor	**12 oz.**

The flavor formula used in the above is as follows:

Eucalyptol	**30 cc.**
Oil peppermint	**40 cc.**
Menthol	**20 cc.**
Oil bergamot	**20 cc.**
Oil anise	**20 cc.**

Melt the sugar down with the water in a steam kettle. Cover to steam down sides of the kettle. Heat to about 160° C. or to hard crack. Cool down to about 135° C., add the flavor, mix in well. Roll and cut into drops.

Foaming of Creams: *I am having difficulty controlling the foaming of emulsion creams. Sometimes it takes as much as eight hours for the bubbles to disappear. Quebec.*

Since you do not give me the composition of your emulsion cream, I cannot say whether the bubbling is due to a gas-forming reaction due to some incompatibility. Of course, other factors may enter the picture and the foaming of the cream may perhaps be controlled by regulating the angle at which the mixer is placed in the mixing tank, by controlling the speed of mixing, and by careful avoidance of incorporating air during mixing.

Pacquins . . .

famous for

smoothing skin . . .

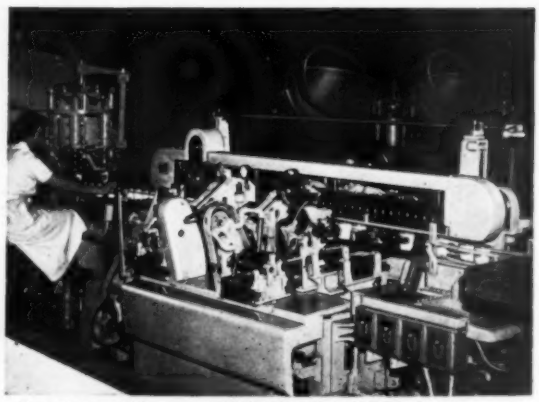
use PNEUMATIC . . . famous for smoother labeling

"Smooth as silk" could describe the way milady's skin feels, after using PACQUINS . . . or the way Pneumatic filling and labeling machines do their job in PACQUINS model plant.

A glance at the PACQUIN containers will tell you . . . this is no easy labeling job. It calls for precision of the highest order — the kind of precision that Pneumatic equipment can *always* be depended on to give, day in and day out, at top speeds.

Built according to the highest engineering and manufacturing standards in the field, Pneumatic machines operate with money saving efficiency, handling a great variety of world famous products. If you, too, are looking for "lower cost per container" . . . better look Pneumatic's way.

PNEUMATIC SCALE CORP., LTD., 70 Newport Avenue, Quincy 71, Massachusetts. *Also: New York; Chicago; San Francisco; Los Angeles; Seattle; Leeds; England.*



Installation of Pneumatic DIREC-TRANSFER Labelers and Rotary Cappers in Pacquins plant at Glen Rock, New Jersey.

PNEUMATIC **PACKAGING AND BOTTLING MACHINERY**

Management Forum

by Francis Chilson
INDUSTRIAL CONSULTANT

The Air of Authority

Physical things are tangible and can be seen and felt. Spiritual things are intangible and cannot be felt physically but they can be seen and felt spiritually. I refer to the fact that to an acute observer a man's character, personality and to some extent his experience can be detected in his bearing. I was reminded of this the other day when I ran into the president of a young but very prosperous firm, in the building of which my friend played a dominant part. I have known this fellow for years. I knew the guy when he didn't have a dime; when he was a meek, diffident person, completely lacking in poise and self assurance. But he had changed, not physically but spiritually. He now has the poise and easy assurance of a man accustomed to the exercise of authority.

This also brought to mind the experience of John Hogge, who as an officer of the British Intelligence, captured Himmler after the last war. John by the way is one of the managing directors of Aspro Limited, and a thoroughly regular bloke if I ever met one.

When John captured Himmler he didn't know who his captive was. Himmler had changed his physical appearance altogether. He had dyed what hair he had left, he had eliminated his glasses and he was dressed in coarse, dirty workman's clothes. But the one thing he could not disguise was the subtle air of authority that emanated from him. Himmler was bagged with a batch of other German laborers and peasants and hauled up for questioning. When John started to question Himmler he knew in spite of the disguise and in spite of an attempt to talk in an uneducated idiom, that his prisoner had been a man of great authority, and he knew instinctively that he had captured a big man indeed. John therefore mounted a 24-hour guard over Himmler and it was not until he had turned his prisoner over to higher authority that Himmler was carelessly given an opportunity to commit suicide and John then learned that he had bagged very big game indeed.

Education Subsidies

Some time ago I pointed out the need for subsidizing the education of bright young men who through their fathers are identified with particular companies or with the industry in general. I was much interested to learn subsequently of the plan adopted by the Bethlehem Steel Company. This company has an arrangement with forty-five privately endowed colleges under which Bethlehem contributes $3,000 for every graduate who takes Bethlehem's "loop" course for administrative and technical training. This assures Bethlehem of a supply of college men whose training has been focused on steel problems. While it is a step in the right direction it is inadequate in that the graduates must finance their own education. There are lot of brilliant boys whose parents' financial circumstances make it impossible for them to consider higher education. I should have said extended education because education is education and college education differs from grammar school education only in degree. Many poor boys are living in small towns where there is no possibility of attending college at night. Many of them unfortunately come from uneducated families who can see no value in an education beyond that required by law. Every established business spends a lot of money on education although it may not be recognized as such. They do have to train their younger people and they should provide the means by which some of that training can be imparted in the colleges.

Fan Mail

I like nothing better than to stick pins into the brass hats, especially when they are not realizing their own potentialities and the potentialities of their organizations. I like particularly to stick pins in them when they are stuffed shirts, bloated with their own conceit. I was much amused therefore by the following letter from the research director of a well known firm. (Parenthetically I may add that my remarks on the inade-

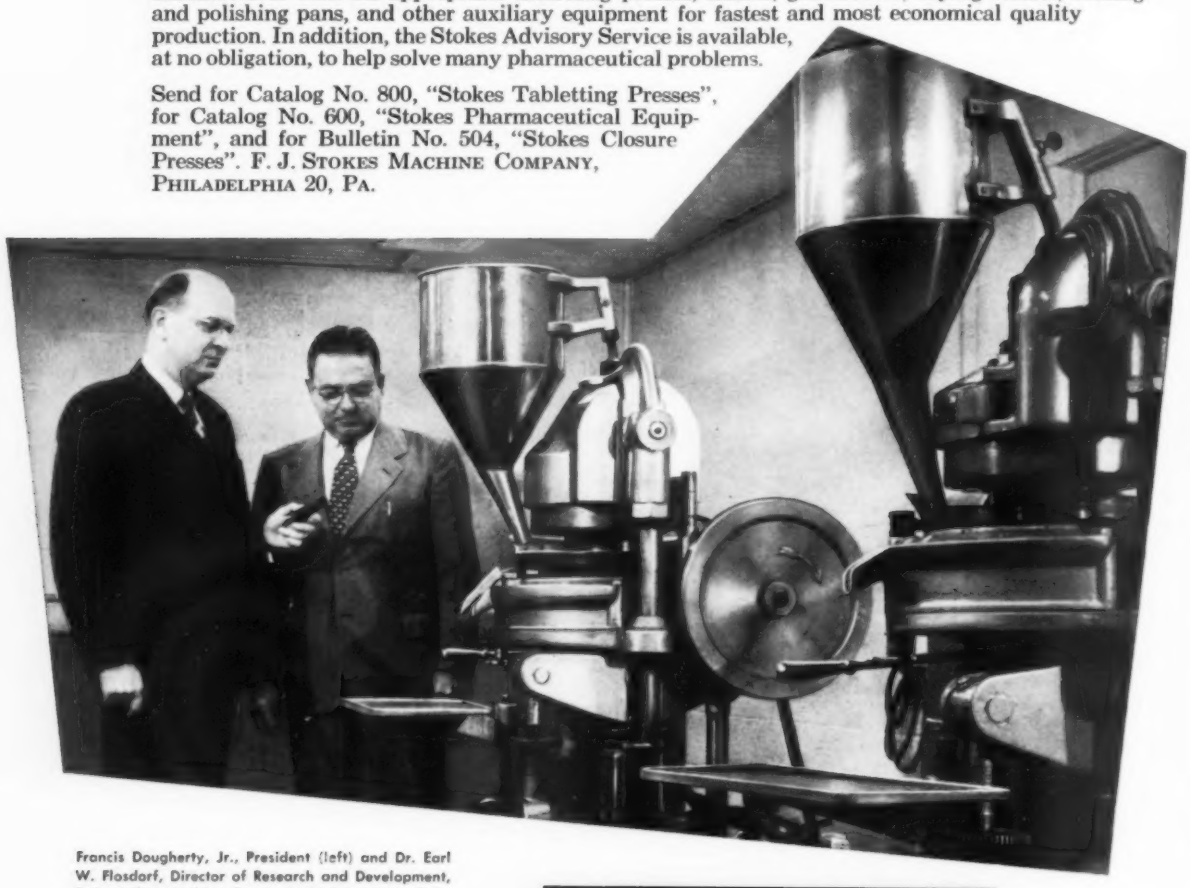
Stokes New Laboratory...Equipped to help solve your problems

Tablet formulas, punch and die design, procedures for mixing, granulating and coating pharmaceutical preparations . . . all are a part of the customer services conducted at the new Stokes Experimental and Applications Laboratory in Philadelphia. Representing an investment in excess of $150,000, the new laboratory occupies 2,800 square feet of floor space and consists of several groups of equipment devoted to tabletting, vacuum drying and processing, and plastics extrusion.

Each section of the new Stokes Laboratory is completely enclosed . . . actual production conditions are simulated through the use of independent controls for temperature and humidity. A large portion of the laboratory is devoted to pharmaceutical study . . . providing new ideas for increased production, lowered production costs, and improved product quality in the plants of existing and prospective Stokes customers.

For almost sixty years Stokes equipment has been used by leading firms in the pharmaceutical industry. Whether production is by the hundred or the million, Stokes can supply any manufacturer with the appropriate tabletting presses, mixers, granulators, drying closets, coating and polishing pans, and other auxiliary equipment for fastest and most economical quality production. In addition, the Stokes Advisory Service is available, at no obligation, to help solve many pharmaceutical problems.

Send for Catalog No. 800, "Stokes Tabletting Presses", for Catalog No. 600, "Stokes Pharmaceutical Equipment", and for Bulletin No. 504, "Stokes Closure Presses". F. J. STOKES MACHINE COMPANY, PHILADELPHIA 20, PA.



Francis Dougherty, Jr., President (left) and Dr. Earl W. Flosdorf, Director of Research and Development, F. J. Stokes Machine Co., inspecting a corner of the new Stokes Experimental and Applications Laboratory at the Stokes plant in Philadelphia. Machines shown are Stokes Rotary Tabletting Presses.

STOKES

STOKES MAKES: High Vacuum Equipment, Vacuum Pumps and Gages/Industrial Tabletting, Powder Metal and Plastics Molding Presses/Pharmaceutical Equipment

quacies of some of the high brass have been so pertinent on occasion that I have been accused of obtaining inside information from organizations with which I have never been connected.) The following therefore will amuse you:

"Dear Dr. Chilson:

First, may I congratulate you on your series of articles in the Management Forum in D.C.I. Your descriptions of the antics of top brass so aptly describe my present place of work that they could well have been written sitting at my desk. In fact, so pointed are they that the 'top brass' have attempted to reduce the circulation of D.C.I., and limit it to the office staff inside our organization because of the frequent appearance of your articles, heavily underlined in the 'top brass' suggestion box. 'Bootleg' copies are obtained by the technical staff several months later."

Electron Sterilization

Can foods and drugs be successfully sterilized by electrons or cathode rays against spoilage and contamination? How would this affect present-day processing, transportation and storage methods?

These are the questions being studied here today by 100 research scientists from food, drug and related industries throughout the nation as they gathered at a symposium to hear technical papers on the latest trends in this new field and to witness the opening of the Cathode Ray Sterilization laboratory by the General Electric Co., X-Ray Department.

What they saw during their visit to the plant was a 1,000,000-volt x-ray machine that does not produce x-rays. Instead, with its tungsten target removed and a thin foil window substituted, the machine produces a powerful stream of electrons, or cathode rays as they are also known, which are death to bacteria, and whose effects on the food or drugs themselves are now being studied.

The electron-producing machine is secreted in a special room of the Coolidge Laboratory building near the X-Ray plant, which room has high concrete walls that are two feet thick at the base and taper up to 1 foot thickness at the top, 16 feet above the floor. The room can be entered only through a maze, or baffled passageway. This protects operating people on the outside against exposure to the electron beam as they work the controls, while at the same time making it unnecessary to open a huge concrete door to enter the room for adjusting the equipment.

The visitors were shown samples of bread and meat that have been kept fresh for several weeks, inside plastic envelopes, as a result of exposure to the electron beam. Contrasting with these fresh samples are identical samples of the same bread and meat kept in the same envelopes without sterilization. In the latter case, the samples are moldy and stale.

According to Joseph Ranftl and Herbert Schreiber, of the Department's Industrial Section, the electron stream has a varying effect on foods, depending on many factors—length of exposure, voltage and amperage of the circuit, type of food, stage of processing at which the beam is applied, and amount of penetration required to sterilize. The problem is to find the ideal technique for handling each individual food.

The new laboratory was created to provide industry with a "cooperative testing facility to which industry can bring its problems and we can help work out the solutions," they stated.

According to R. F. Holste, Manager of Industrial Products, "another avenue for use of electron beams—still being explored—offers great promise. Dr. E. E. Charlton and other scientists at the GE Research Laboratory in Schenectady have found that electrons can toughen flexible plastic containers to withstand steam, prevent certain plastic dishes from wilting in the hottest automatic dishwasher, and change sawdust into digestible cellulose.

"In treating plastics, a 15-second exposure is all that is necessary to cure a plastic; this raises the temperature point at which it will soften, and increases its resistance to destructive action of many solvents. General Electric's Chemical Division at Pittsfield, Mass., in cooperation with the General Electric Research Laboratory, is now working on commercial development of the process. It has even been found possible to control the pattern of the electron beam so that only essential portions of the plastic exposed to the beam are treated and modified. This suggests new methods of casting and forming plastic products, according to word received here from Dr. Guy Suits, GE vice president and director of research."

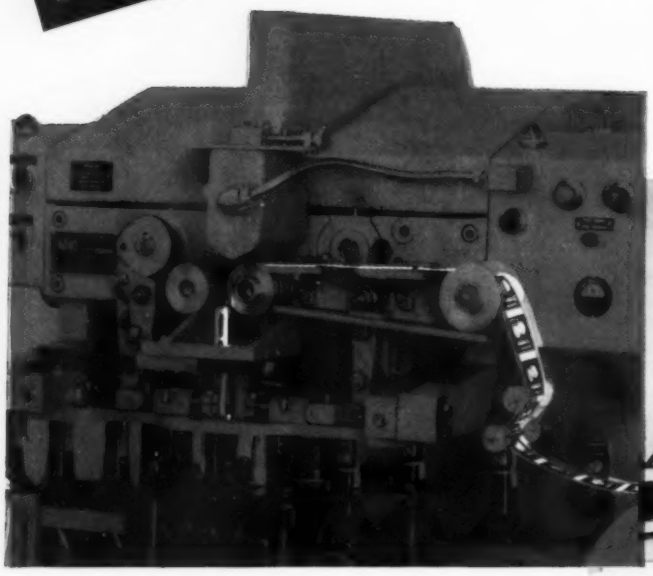
Among speakers at the Cathode Ray Sterilization Symposium being held in conjunction with the opening of the Laboratory are Dr. W. M. Urbain, assistant director of research, Swift and Company, Chicago; Dr. G. M. Dack, director, Food Research Institute, University of Chicago; and Drs. E. J. Lawton and W. D. Bellamy of the GE Research Laboratory at Schenectady.

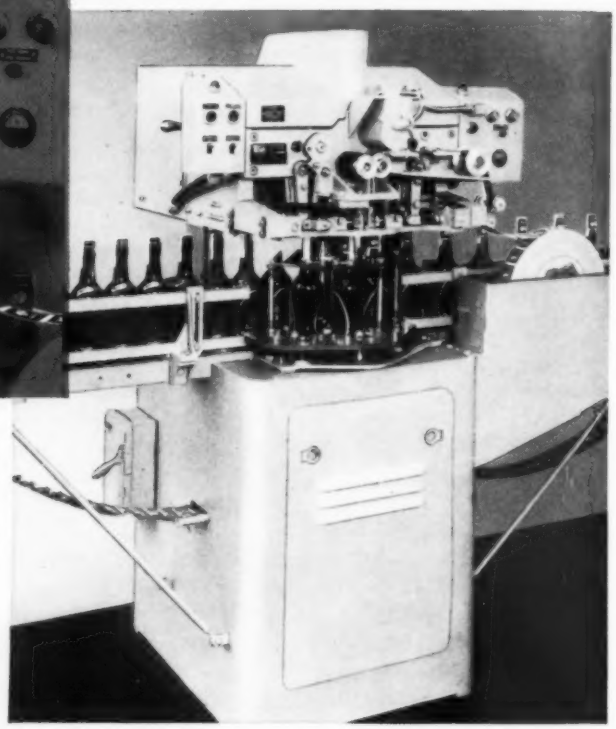
Milwaukee speakers will include W. C. Hill, Manager, Industrial and Non-Allied Products; Ranftl, Schreiber, James Knowlton and G. R. Mahn of the X-Ray Department.

Trade Norms

Every industry operates under certain trade norms or ratios. It is a matter of keen interest to me that the majority of the manufacturers of drug and cosmetic products with whom I have come in contact, do not know the norms of their own industry. The drug and cosmetic industry in the past has been so inherently profitable that the individual manufacturer is concerned only with his own financial ratios. If his sales and profits are satisfactory as compared with his sales and profits of previous periods, he is not greatly concerned with the relation between his ratio and the norms or average ratio of the industry. But there comes a

NOW! The WORLD Automatic Cellulose BANDING MACHINE





How it works— The cellulose banding material, in roll form is fed into position over the container, then cut to precise length. The container is indexed by starwheel feed. The band is opened by combined mechanical and vacuum action and transferred from a plunger over the bottle neck and cap. Operation is fully automatic. Quick changeover to other sizes of bands and bottles is readily effected.

What it does— J. C. Miller, Plant Manager of Miracle Power Division, The AP Parts Corporation writes: *"In the first eight months of operation our World Automatic Cellulose Banding Machine applied bands to 940,488 eight ounce Boston round bottles with 25mm caps, at a speed of 65 per minute.*

"Before placing this machine in operation we had four to five people installing the bands by hand. High cost and fluctuating production made this operation so unsuccessful we were seriously considering changing to some other type of seal. Now, with this banding machine, our cost has been greatly reduced and we are very well satisfied with the performance and accuracy of the machine."

for high production, uniform quality, low cost application of cellulose bands to glass containers of the shapes and sizes normally handled by automatic cappers, fillers and World Labelers.

One more slow, costly, laborious hand operation is now eliminated. Banding is done at packaging line speeds. World Banders are available for 75, 150 or 225 containers per minute.

For complete information on automatic application of plain bands of whatever diameter, printed bands and precisely spotted bands, get in touch with

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WORLD'S

time when through bad luck or sudden change in economic conditions the manufacturer who, in ignorance of the norms of his industry, commits himself to a major investment and finds himself in very hot water indeed.

In the enthusiasm engendered by steadily increasing sales, manufacturers have committed themselves to expansion programs that violated the norms of the industry and caused disastrous repercussions. Recently one of the large pharmaceutical manufacturers spent a vast sum of money in building a new plant which could not economically be put into operation by the time it was built, and it had to be "moth-balled." I know of another case where a large addition was made to a plant and it had to be occupied as a warehouse because the company found that they could not immediately afford to move their equipment into it. As a matter of fact, I know of several of such cases. I have on many occasions warned of the danger of chronologically measuring your own performance against your previous performance. Your current performance may be better than your previous performance and still be out of line with trade performance.

In the ethical branch of the pharmaceutical industry net investment in plant and equipment should not be in excess of 33-1/3 per cent of average net sales for the previous five years. In the proprietary end of the industry it should not run over 25 per cent, and in the cosmetic industry it should not run over 20 per cent.

There are many other norms, such as the relation between inventories and net sales income; sales per person employed and sales per marketing person employed. The cost of sales is a good index, but it must be applied judiciously because the cost of sales ratio of the long line pharmaceutical and long line cosmetic houses is quite different from that of the specialty houses.

You will ask, where can such data be obtained? The Securities Exchange Commission is a good source, so is Moody's. And Dun & Bradstreets. In guiding any business it must be remembered that the amount of money received as income from net sales is far less important than how it is spent or more or less permanently invested.

The following information is supplied by manufacturers of the equipment described and claims made below by these manufacturers are passed along for what they are worth. Presentation of such notice in this department is not to be taken as endorsement of the claims or of the equipment.

Dust and Fume Eliminators

New Centri-Merge Vertical Rotor wet type dust and fume eliminators for industrial applications are now being manufactured by Schmieg Industries, Inc., Detroit 2, Michigan. Two unit types are being offered.

One unit is used for wet collection and elimination only, while the other is a combination primary dry and secondary wet collection unit. The latter has a built-in dry type pre-cleaner for dry collection of heavier and most fine particles, and is particularly useful where material salvage is an operational requirement.

Both units combine the cyclonic principle of dust separation and positive high pressure water action to remove impurities from the air in a rotating torrent of water. For certain applications, say Schmieg engineers, other liquids than water may be used. Capacities range from 500 to 50,000 C.F.M.

Schmieg calls attention to the following advantages of the new Vertical Rotor equipment: low ratio of power to rated capacity, high ratio of water circulated to air volume handled, an independently driver rotor and fan to permit adjustments to meet load and operating conditions, automatic liquid level control, self-acting skim-off of floating particles collected in the tank, collection and elimination functions not affected by water failure, and optional location of air inlet arm.

The units are available with an integrally constructed fan or they may be arranged for standard fan installation.

Disposal of material collected in the tank is by drag conveyor, hopper tank skim-off, or manual clean-out. After cleaning, excess moisture is removed from the air by extractors.

Clean-out doors, located on the outside of the units, permit cleaning while in operation.

Vacuum Sublimation

A new basic process for the separation and purification of chemicals—vacuum sublimation—has quietly appeared on the scene.

Evolved quite naturally from experience with the freeze-drying process in the preparation of pharmaceuticals, especially biologicals and vaccines like blood plasma and gamma globulin, the sublimation method has now been introduced into the chemical field and a patent covering this application of the technique has been granted to the F. J. Stokes Machine Company, Philadelphia, Pa., pioneers in the development of industrial vacuum-processing equipment and procedures.

Sublimation is now being used as a separation and purification process in the production of several pure chemicals, such as salicylic acid, in quantities of several tons per day.

The new process is based on the well-known principle that under vacuum conditions certain materials can be vaporized from the solid state at temperatures below their melting point.

This principle is widely used on the laboratory scale but has also been used for many years on the industrial scale in one method of producing pure magnesium. A mixture of ferro-silicon and dolomite is briquetted and then roasted in a closed retort. This reduces the dolomite to pure magnesium and calcium. Pressure in the retort is then reduced to below one millimeter, whereupon the magnesium sublimes (that is, vaporizes from the solid state) and condenses on the cooled ends of the retort, while the calcium remains behind.

For chemical separation and purification by vacuum sublimation, the impure product is placed in a closed,

A SIGN OF GOOD JUDGMENT

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Famous **NAMES** *in* **DRUG** *and* **COSMETIC HISTORY**

Year after year more famous names join the ranks of manufacturers depending on Stokes & Smith Filling Machines for fast, accurate packaging.

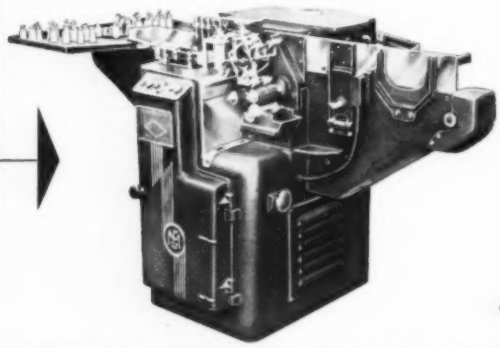
Powders, granules, pastes and creams are filled into jars, boxes, envelopes or cans with equal efficiency. The S & S Universal Filler fills by gross-weight, packing, or volumetric measurement; speeds up to 50 per minute depending on product and package.

S&S FILLING MACHINES are engineered to give continuous, every-day operation with only minor maintenance. There is an S & S Filler to meet your exacting requirements. Write today for illustrated Bulletin #4962.

HIGH SPEED
Precision Labelling at Low Cost with
"BANKS" LABELLER

Vials, jars and bottles are labelled on a "Banks" up to 10,200 per hour. The "Banks" features clean labels with no excess glue, accurate registration, "No Bottle – No Label" device, and Variable Speed Range.

Write for your reference copy of "Banks" Catalog.



STOKES & SMITH CO.

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TRADE MARK

jacketed vessel, the pressure is reduced by a vacuum pumping system, and the charge is heated. By manipulation of the operating pressure and the temperature to which the charge is raised, certain portions of the mixture will volatilize and pass off through the vacuum line. For some products, the pure product desired will sublime and pass off; in other cases, the impurities will volatilize and the pure product will remain.

In the separation and purification of salicylic acid, for instance, the impure chemical as placed in the vacuum chamber includes as impurities a volatile liquid (phenol) and a non-volatile ash. This charge is heated under a pressure of a few hundred microns, and is constantly agitated meanwhile. The pure chemical sublimes and the phenol volatilizes and both pass out of the chamber and along the vacuum line toward the pumping system. The pure salicylic acid is trapped as a solid in a water-jacketed condenser with scraper arms; the phenol passes onward to a shell-and-tube surface condenser where it is condensed as a liquid and recovered. The ash remains in the vacuum chamber.

The pure chemical is recovered in a large receiver placed beneath the scraper-type condenser, into which it falls as the scraper arms dislodge it from the condenser walls.

In setting up the processing layout, the choice of equipment, particularly the type of condensers, depends on whether the volatile by-products are to be recovered or whether they are to be exhausted to the atmosphere.

Vacuum sublimation as a separation process is applicable to a limited group of chemicals only, of course. For these, it permits products of extreme purity to be obtained. It is desirable where separation must take place free of contamination from air or from other gases, and is especially attractive because it is completely free of any dust-explosion hazard.

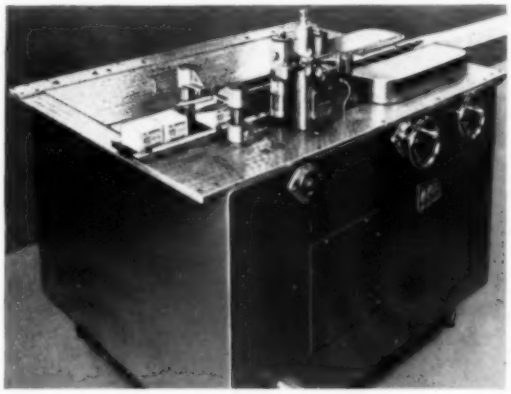
Semi-Automatic Machine Filler

A semi-automatic filling machine that fills food, cosmetic, dairy, chemical, paint and similar semi-liquid and semi-solid products into all types of containers including tubes has recently been developed by The Filler Machine Co., Inc., Philmont Club Station, Pa. The extremely versatile, portable unit very accurately fills between 15 and 55 containers per minute depending on product and size of containers to be filled. It also can be cleaned easily, changed over quickly to different products and containers. All contact parts are of stainless steel and monel metal making the machine sanitary for all operations. A variable speed drive permits wide speed range and a separate motor driven agitator can be supplied for use with products that must be constantly mixed and forced into the measuring cylinder. Whenever required, a foot operated clutch can also be provided to free operators' hands for filling operations. The machine contains a 25 gallon stainless steel hopper, is simple and economical to operate and is ruggedly constructed for long, trouble-free life. It is an ideal filling unit to use in small or large plants where the expense of a fully automatic filling machine would not be justified for the work to be done. Write the Filler Machine Co., Inc., Philmont Club Station, Pa., for full details.

Package Imprinting Machine

Redesigning of the Markocoder 3M automatic package imprinting machine, which prints identification data and code-dates on the top or ends of cartons and boxes as an integral packaging-line operation, has just been completed. Adolph Gottscho, Inc., maker of the machine, announces that the new "Golden Jubilee" Markocoder 3M is a streamlined version of the original design with a number of important new features.

Operating speed of the machine has been increased to permit imprinting of small cartons at rates up to 600 units per minute, adequate to match the production



of all present-day high speed cartoning machines. The length of the machine now measures only 54″ as compared to the previous length of 72″. The new Markocoder 3M is said to be more versatile because it can handle cartons of unusual dimensions within its range, as well as rectangular cans. Also, it will print very close to the bottom of a package instead of requiring a 3/16″ margin as heretofore, and can be adjusted for closer registration control during the regular imprinting operation. Additional improvements have been made to permit quicker change-over for cartons of different sizes as well as a more rapid method of changing ink color and die wheel. Furthermore, the ink pump is now an integral part of the imprinting machine, eliminating the need for a separate motor.

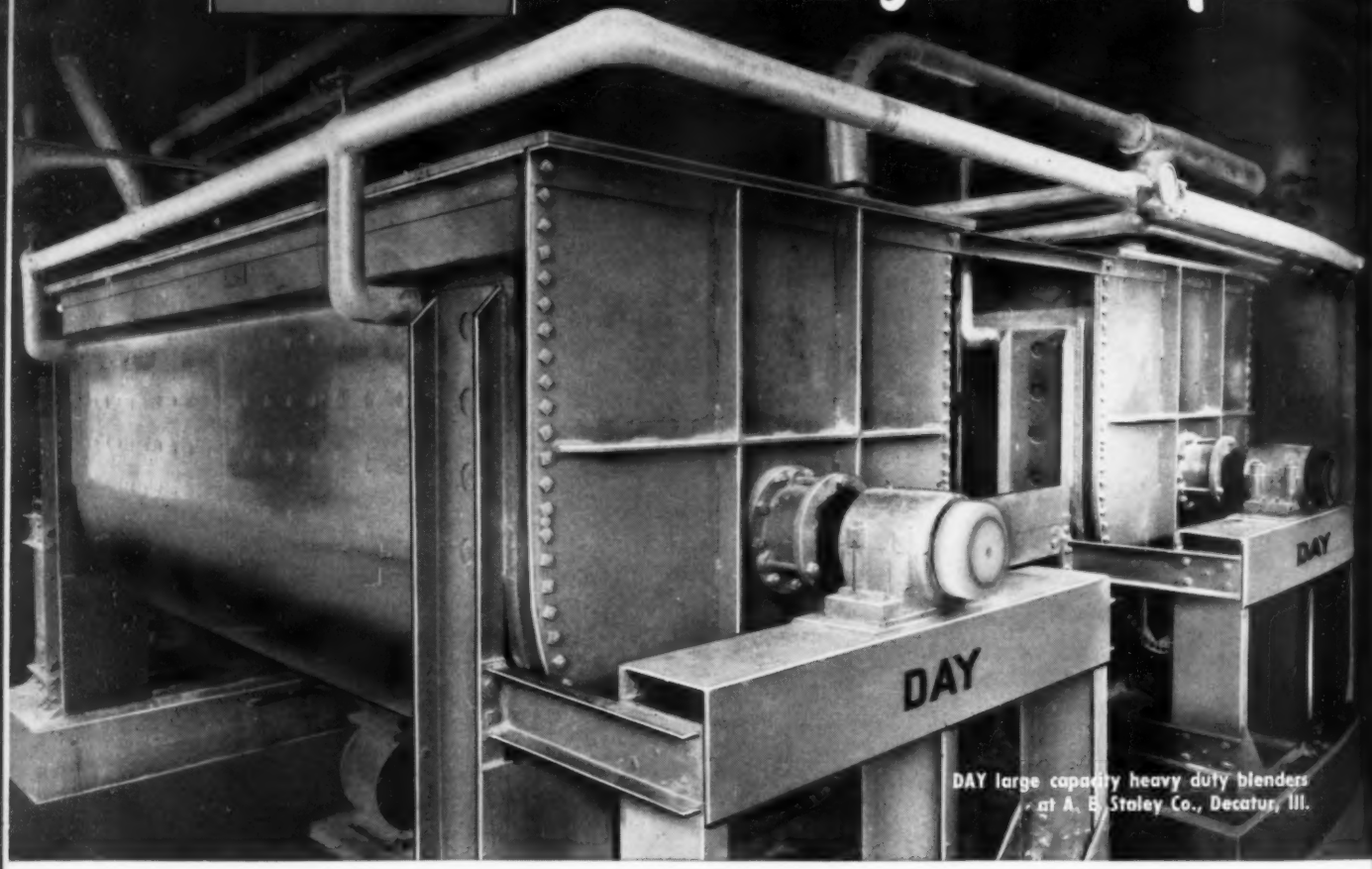
Complete details about the "Golden Jubilee" Markocoder 3M are available from Adolph Gottscho, Inc., Hillside 5, New Jersey.

Mixers

New liquid blending, portable propeller mixers are available from L. H. Butcher Company, 3628 East Olympic Boulevard, Los Angeles 23, California, in sizes from ⅛ to 3 HP. They clamp directly on barrels, drums, tanks, or kettles. Single hand wheel adjusts mixer position for maximum efficiency. Shaft length adjusted with one Allen screw, leaving one handfree to

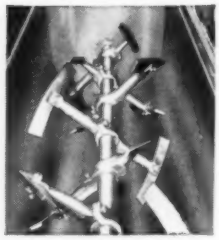
IN BLENDING EQUIPMENT

DAY means longer life span*

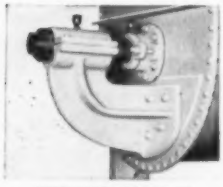


DAY large capacity heavy duty blenders at A. E. Staley Co., Decatur, Ill.

*Rugged construction plus precision engineering . . . that's the DAY combination that means *extra* years of trouble-free, economical operation. Plant after plant is finding this true. Whatever your special need, you'll find a DAY Heavy Duty Blender designed for you. Special DAY features on this Heavy Duty Blender have been developed to provide top performance and extra-long equipment life span. The DAY dry color agitator is designed for heavy bodied powders. Other types of agitators are available to meet specific requirements. DAY large outboard bearing construction gives maximum shaft support, smooth operation. Exclusive stuffing box design prevents bearing damage from abrasive materials, and eliminates danger of product contamination by bearing lubricants. The DAY spiral ribbon agitator is designed for paste, semi-paste, granular or liquid products. For complete information or service, call your nearest J. H. Day field engineer or write for Bulletin 354-A.



DRY COLOR AGITATOR



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hold shaft in desired position until screw is tightened. Lighter weight housings make easier lifting. Shaft bearing removes strain from motor bearings. Standard motors easily replaced in case of failure. Balanced propellers eliminate vibration and shaft whip. Furnished with shaft and propellers of ordinary metals or stainless steel. Drip proof, totally enclosed, or explosion proof motors for operation on all types of current. If furnished with job details, distributors will make guaranteed recommendation of proper size.

Stainless Steel Tanks

Plants that want to make best use of limited storage space for liquids will be interested in a new bulletin just issued by Cherry-Burrell Corporation. Among the many custom built stainless steel storage tanks illustrated by more than 20 photographs are single shell, insulated, refrigerated and heated tanks, both rectangular and cylindrical. Many accessories such as air agitators, mechanical agitators, peepholes and automatic level indicators are depicted. Also included in the 4-page bulletin are tables of typical tank dimensions.

A copy of Bulletin G-479 can be obtained by writing to Cherry-Burrell Corporation, Dept. AS-7, 427 W. Randolph St., Chicago 6, Ill.

Electronic Inspector

A tiny crystal of cadmium sulfide, about the size of a match-head, acting on signals from an 80,000-volt X-ray tube, is now doing a "watchdog" job for several major brewers, insuring automatically that all cans of beer are tightly sealed and contain exact measure.

Known as a high-speed level checker, the unit is capable of inspecting cans or cartons at rates far greater than those at which any processing line presently operates, and can work at and above a speed of 900 containers per minute within an accuracy of 30 drops of beer, or plus-or-minus 1/64".

In addition to beer, the unit can be adapted to inspecting many products packed in cans or cartons, including such liquids as milk, fruit juices, waxes, oils, and chemicals; such grains as salt, cereals and soaps; and powders, such as flour, bake mixes, insecticides and tooth powders.

The cadmium sulfide crystal is grown in vapor-filled hothouses at GE's X-Ray plant in Milwaukee, where the widespread applications of the new detectors were first predicted a year ago. The department previously announced a special adaptation of the crystal principle to the automatic inspection of hand grenade fuses, insuring the full content of time-delay powder in the fuse after they are assembled at Army Ordnance plants. These are enhancing safety and saving millions of dollars in inspection costs, as compared with earlier, more expensive methods using non-automatic X-ray and X-ray film.

The brewers using the new unit term it a "sleepless eye", which performs a needed job that has been impossible hitherto. It unfailingly spots low-fill, indicating leaky cans, and can also be adapted to checking overfill, which leads to excessive gas pressure.

The crystal detector is placed at the desired height of fill level on one side of the conveyor line, with the X-ray tube on the other. When a can or carton that is not full enough comes along, the crystal receives an extra jolt of X-ray from the tube, which changes it from a non-conductor to a very good conductor of electricity and starts an electrical circuit in operation. This is relayed to an automatic air-blast unit, which blows the faulty container off the line.

This apparatus is the "last word" on the inspection line, being placed at the conveyor just before the cans are loaded into cartons.

Blender

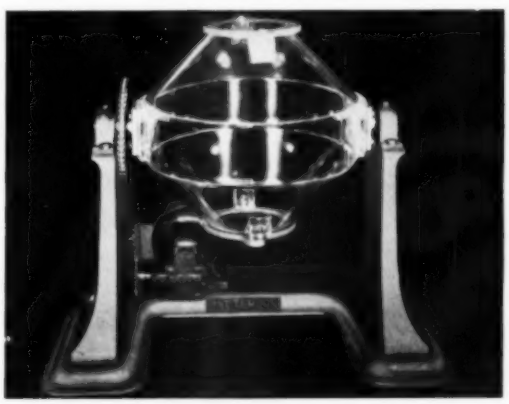
A new Laboratory Dry Blender, designed for research and development of a wide range of blending problems, has been introduced by the Patterson Foundry and Machine Company.

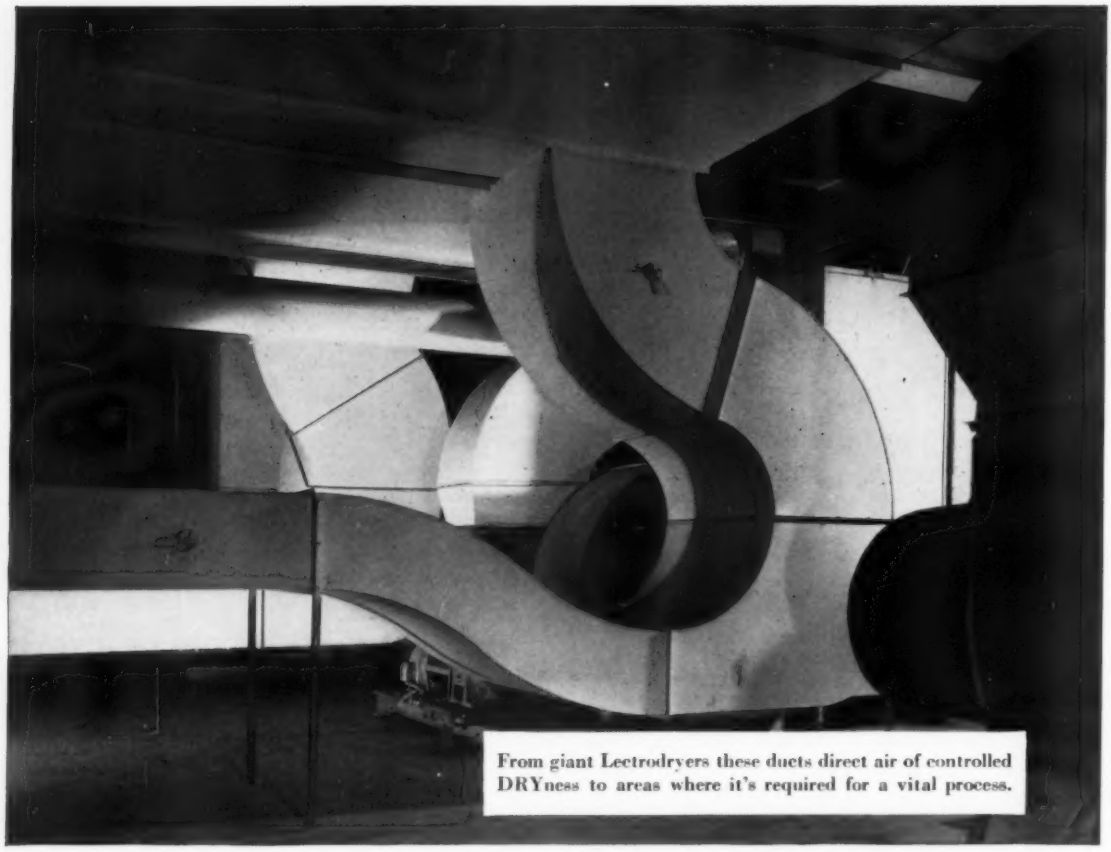
Made of clear, rigid plastic, this new Type "L-p" Blender provides the opportunity of studying: effects of changes in blending times; effects of changes in consistency of raw materials; density differences; effects of size and shape of particles; general nature, such as adherence of particles to each other or to blender walls, particle breakage, etc.

The Patterson Laboratory Dry Blender, designed for laboratory development and control, is complete and compact with its lightweight aluminum frame and integrally-mounted motor drive. With its diameter of 12", it has a gross capacity of 0.5 cubic feet and a batch or working capacity of 0.31 cubic feet. It is capable of blending any materials weighing up to 100 pounds per cubic foot. In all cases, this unit produces an absolutely uniform blend, and the same blend which is later obtained with materials in the same proportions in large production size Conical Dry Blenders—thus giving an accurate indication of the production blend.

For further details on the Patterson Type "L-p" Conical Dry Blender, write The Patterson Foundry and Machine Company, East Liverpool, Ohio.

(Continued on page 552)





From giant Lectrodryers these ducts direct air of controlled DRYness to areas where it's required for a vital process.

. . . Of 24 chemical majors cited by *Fortune*,

20 are long-time Lectrodryer* users

because . . .

1. **Lectrodryers DRY organic liquids in volume to a moisture content as low as 3 or 4 parts per million.**
2. **Lectrodryers DRY air and gases in small or large volume to a dewpoint as low as -110° F.**

Fortune Magazine's half-century study of the chemical industry looks like a "Who's Who" of Lectrodryer customers. Of 24 leading chemical companies named, 20 have used Lectrodryers for years. They learned long ago to depend on Lectrodryers for controlled DRYness.

Lectrodryers remove the hard-to-get moisture which could upset a process or cause an unwanted reaction. Placed on stream in a chemical process, Lectrodryers deliver air, gases and organic liquids free of contaminating moisture. In work areas and warehouses, Lectrodryers are DRYing atmospheres to 10% relative humidity.

Data Available—A free booklet, *Because Moisture Isn't Pink*, describes Lectrodryers, their function and applications. For a copy, write Pittsburgh Lectrodryer Corporation, 309 32nd Street, Pittsburgh 30, Pennsylvania.

In England: Birlec, Limited, Tyburn Road, Erdington, Birmingham.
In France: Stein et Roubaix, 24 Rue Erlanger, Paris XVI.
In Belgium: S. A. Belge Stein et Roubaix, 320 Rue du Moulin, Bressoux-Liege.

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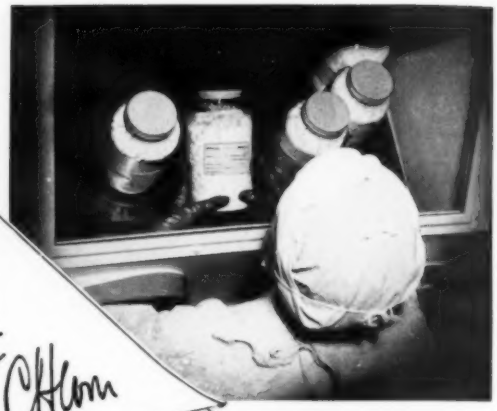

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More and more pharmaceutical manufacturers are turning to Heyden, specialists in bulk antibiotics, for their requirements. Heyden manufactures these products in a variety of millings affording a choice of particle sizes suitable for specific formulations. They are made in sterile or non-sterile form and packaged in jars or drums.

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Industry's Books

Tool Engineers' Data Book, by Gerhard J. Gruen, Consulting Engineer, Book Div., Reinhold Publishing Corp., New York, (1953), 219 pp., Cloth, $5.50.

This book presents rapid, easy access to all of the tables, formulas, constants and specifications needed by the practicing tool engineer and designer. In this compact volume all explanations of theoretical concepts and other text matter have been omitted, as have obsolete material and tabular matter not directly related to the work of the tool engineer. It contains complete data on the general properties of special alloys, heat treatment of special alloys and stainless steels, spot identification of metals, alloys and plastics, blank size diameters for shells and a great amount of other hard to find information. Also included in separate sections are conversion tables, mathematical tables and an extensive glossary of metallurgical terms.

Dermatologic Formulary, from the New York Skin and Cancer Unit, Service of Dermatology, (Dr. Marion B. Sulzberger, Director), Frances Pascher, M.D., Editor, (Revised, 1953), Paul B. Hoeber, Inc., New York, 150 pp., $3.

One of the main purposes in publishing this formulary is to serve the practitioner by listing the most tried and useful dermatologic prescriptions, together with the briefest and simplest explanations of their uses, indications, and contraindications. In addition, it is the objective of this booklet to supply a model dermatologic formulary from which other hospitals, clinics, and institutions can, according to their needs, select a longer or shorter list of standard preparations for the care of the multitudinous sufferers from skin diseases. The preparations included in this formulary are the product of the actual composite experience gained by leading teachers of dermatology, practicing since 1882 in what is probably the largest paid out-patient service of dermatology in the world. It is to the knowledge and experience of all these skin specialists, past and present, emanating from almost every great school of dermatology in the United States, the Americas and Europe, that this formulary of today owes its scope and its substance.

The Furans, by A. P. Dunlop, Assistant Director, Chemical Research, The Quaker Oats Co., and F. N. Peters, Vice President, The Quaker Oats Co., American Chemical Society Monograph Series No. 119, 867 pp., Book Div., Reinhold Publishing Corp., New York, (1953), Cloth $18.

This important new monograph offers the first complete treatment ever published on the subject of furan chemistry. It provides a ready source of information on the behavior and applications of all furan types, including industrially important furfural. The book is conveniently divided into two sections, the first dealing with the chemistry of furan compounds, and the second devoted to industrial applications of furfural and its derivatives. Separate chapters describe such chemical uses as nylon, lysine, dihydropyran, solvent applications and uses in the resin field. Dunlop and Peters' monograph will prove invaluable to industrial research personnel at all levels, especially in the fields of petroleum, vegetable oils, resins and organic chemicals.

Accepted Dental Remedies, 18th Ed., 208 pp., (1953), Council on Dental Therapeutics, American Dental Association, Paper bound, $2.

Accepted Dental Remedies is published annually by the American Dental Association, Chicago, Ill. This publication is designed to serve as a handbook of dental therapeutics. In addition it contains a list of therapeutic products marketed in the United States which are acceptable to the Council on Dental Therapeutics. It also includes the Council's provisions for acceptance of products, some information on standardizing agencies and on prescription writing. This work also includes a general index, a distributor's index, an index to current reports from the Chemical Laboratory and the Council, and an index to more recent reports on products not included in Accepted Dental Remedies.

Tests and Standards for New and Non-official Remedies (containing tests and standards for non-official drugs and dosage forms which stand accepted by the council on pharmacy and chemistry of the American Medical Association on January 1, 1953), issued by The Chemical Laboratory American Medical Association, (1953), J. B. Lippincott Co., Phila., 326 pp., Cloth, $4.

Tests and Standards for New and Non-official Remedies contains definitions, structural formulas, physical descriptions, tests for identity and purity, methods of assay for the active ingredients and dosage forms and tolerance limits of drugs accepted by the Council on Pharmacy and Chemistry for which official standards are not available.

Recent Progress in Hormone Research, (The Proceedings of the Laurential Hormone Conference), Edited by Gregory Pincus, Volume III, 603 pp., (1953), Academic Press Inc., New York, Cloth, $10.

The ninth annual meeting of the Laurentian Hormone Conference took place at Mont Tremblant Lodge, Mont Tremblant, Quebec, in September 1952. The papers presented at that meeting are the basis of this book. The Laurentian Hormone Conference now plays an integral role in the varied and active field of hormone research. It has exhibited sustained vitality and critical capacity not merely because it surveys a lively field of investigation in which intensive progress occurs from year to year. Its vitality is largely the product of an interested, informed, critical membership which gives freely of ideas and concepts, of doubts and constructive speculation. The subject matter of this book is generally classified as follows: I—Chemistry and Biochemistry of Adrenocorticosteroids. II—Adrenocortical Physiology (Symposium on Diseases of Adaptation). III—Physiology of Reproduction. IV—Growth Hormone and Metabolism.

(*Continued on page 534*)

Advancing Therapy

Antidote for Drug Coma

With the increasing use of the barbiturates and related drugs, says L. R. C. Haward (*Chemist & Druggist* 160:66, 1953) cases of collapse and prolonged coma, either accidental or with suicidal intent, are becoming more frequent. In some cases the reaction has been due to the concomitant intake of a proprietary medicine, and the general practitioner is thus faced with a situation requiring great pharmacological insight. Thanks to the efforts of J. Gould, St. Bartholomew's Hospital, London, a preparation has been devised that is of great value in producing a rapid return to consciousness. It not only reduces considerably the period of coma, but produces a return to normal in other psychiatric states, such as delirium and confusion, when they are the consequence of prolonged drug administration. The basic prescription is as follows:

Pyridoxine	**200 mg.**
Ascorbic acid	**1,500 mg.**
Glucose, 10 per cent solution	**100 cc.**
Thiamine hydrochloride	**1,000 mg.**
Nicotinamide	**200 mg.**
Distilled water or standard saline solution, to make	**300 cc.**

The preparation, as a sterile solution, is administered by direct moderately rapid injection via a venipuncture, or by a rapid drip. In severe cases the first recovery may be followed by a relapse, and it is then necessary to give two more injections containing half the above dose at between four- and eight-hourly intervals. Where the situation does not include a coma or comatose state, it is sometimes preferable to give the dose in quarter parts, with about six hours in between each administration, and it will then often be found that the full dose is not required.

The formula may be varied according to the medication history of the patient. However, the full prescription is usually necessary and a wide variety of drug-induced reactions have been cleared up. Among the most frequent cases are those of confusion and delirium following a large dosage of analgesics or sedatives for virus pneumonia, injuries and amputations. Every administration has so far been completely successful, and showed no side reactions.

Local Chemotherapy of Wounds

It is pointed out by P. W. Fenney and J. M. Miller (*U. S. Armed Forces Med. J.* 4:1031, 1953) that a progressive decline in the incidence of surgical wound infections has occurred because of the improvement in surgical technic and the systemic use of the antibacterial agents. A further decrease in the incidence of infection in operative wounds which are unavoidably contaminated with bacteria might be achieved by the local implantation of broad spectrum antibacterial agents before closure. The sulfonamides have been used locally in contaminated surgical wounds and in wounds due to external violence to reduce the incidence of wound infection. Their use was attended by an inflammatory reaction, a delay in healing, and a collection of serum postoperatively in the sutured wound. In addition, the sulfonamides used were neutralized by para-aminobenzoic acid, which is commonly already present in such wounds. The original enthusiasm for their local use was not warranted.

To overcome these disadvantages, Fenney and Miller have developed and tested a mixture of 0.05 Gm. of marfanil (4 - amino - methylbenzene - sulfonamide hydrochloride) and 200 units of streptomycin per Gm. of finely powdered sterile gelatin. They found that the combination of marfanil and streptomycin is bacteriostatic or bactericidal to a large number of aerobic and anerobic bacteria. Resistance to the combination was not found *in vitro* in 45 strains of bacteria from infected surgical wounds. Marfanil and streptomycin in sterile gelatin powder were dusted on contaminated surgical wounds, as an adjuvant to proper surgery and systemic chemotherapy, after operations for acute gangrenous appendicitis, large bowel disease, and pilonidal cyst. There was a marked reduction in the incidence of wound infections as compared with the controls in which this adjuvant therapy was not used. The mixture did not produce an inflammatory reaction, a collection of serum, or delay healing in wounds. The mixture has remained stable and potent for over two years at room temperature and does not support the growth of molds.

Evaluation of Coronary Vasodilator Drugs

It is pointed out by H. I. Russek, K. F. Urbach, A. A. Doerner and B. L. Zohman (*J. A. M. A.* 153:207, 1953) that the evaluation of vasodilator drugs in the treatment of coronary disease presents a difficult problem because of the lack of objective methods of study, the inapplicability of animal observations to man, the elements of subconscious bias, and the inaccuracy of clinical estimates of coronary reserve and myocardial anoxia that are based on the symptom of pain. These workers attempted to avoid some of these pitfalls by recording and comparing the ability of specific agents to modify the electrocardiographic response to standard exercise (Master two-step test) in carefully selected cases.

The findings seem to justify the following conclusions: (1) Glyceryl trinitrate (nitroglycerin) in therapeutic doses exerts a strikingly favorable effect on the response to exercise as recorded electrocardiographically. (2) Papaverine in the dosage of one to two grains (0.065 to 0.12 Gm.) intravenously or three to eight grains (0.194 to 0.518 G.) orally is effective in some patients in decreasing or abolishing the abnormal electrocardiographic response to standard exercise. Such benefit was not, however, observed with usual therapeutic doses of the drug. (3) Of all the agents tested, pentaerythritol (Peritrate) tetranitrate appears to be the most effective drug currently available for prolonged prophylactic therapy in angina pectoris. A 10 to 20 mg. dose affords protection for four to five hours, as judged from the two-step test in the majority of patients studied. (4) Aminophylline, Roniacol (beta - pyridyl - carbinol tartrate), tolazoline (Priscoline) hydrochloride, tetraethylammonium chloride, octyl nitrite, dioxyline (Paveril) phos-

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U.S.I. CHEMICAL NEWS

October ★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1953

New U.S.I. Sulfuric Plant Now on Stream in Midwest

U. S. Industrial Chemicals Co., Division of National Distillers Products Corporation, began additional production of sulfuric acid recently at a new 400-tons-per-day contact process plant in strategically-located Tuscola, Illinois.

U.S.I., already an important sulfuric acid supplier to industry, operates plants for manufacture of this basic material at Dubuque, Iowa, and De Soto, Kansas. The new plant, located in an area of growing agricultural and industrial activity, will answer the needs of sulfuric acid users in the Midwest for a new, easily accessible volume supplier.

U.S.I. is producing all grades of virgin acid, including electrolytic and oleum, at Tuscola. Limited quantities of good quality process-spent acid will also be available for such uses as pickling and fertilizer manufacture.

Further information regarding this important new source of sulfuric acid may be obtained from the U.S.I. office nearest you, or from U.S.I.'s Chemical Sales Department, 120 Broadway, New York 5, New York.

New Floating Roof Cuts Oil Evaporation Losses

A novel floating roof which replaces present steel floating roofs used on crude oil storage tanks has been revealed in the oil industry, according to a recent report. Claimed to be capable of saving the industry millions of dollars in evaporation losses alone, the roof consists of a layer of tiny plastic spheres filled with nitrogen. The spheres, or microballoons, averaging 0.001 inch in diameter, are either mixed with the crude oil on its way to storage or spread over its surface after it is in the tank. Layers about one inch thick have been found best, it is said. The resulting plastic blanket rises and falls as oil is pumped into or out of the tank. In field tests, the roof is reported to have cut evaporation losses by as much as 87.5 per cent.

Review Developments in Paint Industry for 1952

Last year's outstanding developments in the paint industry are reviewed in a 76-page reprint recently made available. The comprehensive summary includes discussions on the effects of business and government on the industry, new paint products, important developments in drying oils, fatty acids, waxes, chemical intermediates, resins, lacquers, emulsion paints, plasticizers, pigments, and paint production, testing and evaluation.

U.S.I. Warns Car Owners Against Re-Using Permanent Anti-Freezes; Danger, False Economy Emphasized

New Educational Campaign Explains How Anti-Freeze Re-Use Can Result in Costly Damage to Engine and Cooling System; Government, Automotive Agencies Have Issued Similar Warnings

In a new educational campaign directed to car owners and service dealers, U.S.I. has joined with various government and trade agencies in publicizing the dangers associated with the re-use of permanent type anti-freezes from season to season.

The U.S. Bureau of Standards, the American Automobile Association, and members of the trade press are among those who have issued previous warnings against this practice.

Depletion of Inhibitors to Blame

According to findings of these organizations, extensive damage to engine and cooling system can result if anti-freeze is left in the cooling system through the summer (or even if it is drained and saved) for re-use during the following winter. The damage is attributed primarily to changes that take place in the inhibitors in the anti-freeze rather than to loss of protective properties in the anti-freeze itself. Draining out the old anti-freeze, thorough flushing of the cooling system, and starting the next winter season with new anti-freeze has been shown to be far more economical than the replacement of water pumps, radiators, and even engines which may be required if these precautions are not followed.

Re-Use Can Be Costly

The service life of inhibitors in any anti-freeze is shortened by many factors. Long driving mileage, high engine speeds, air or com-

MORE

LP-Gas Supplies Increase With Opening of New Plant

New supplies of liquefied petroleum gas are now available to industry through the recent opening of National Petro-Chemicals Corporation's giant natural gas extraction plant at Tuscola, Illinois. The new plant marks the first step in completion of the $44 million joint enterprise of National Distillers Products Corporation and Panhandle Eastern Pipeline Company.

When completed, the National Petro-Chemicals operation will include the world's largest ethylene unit, which will provide raw material for the production of 40 million gallons of synthetic ethyl alcohol per year. The ethylene will also be the starting point in the manufacture of ethyl chloride and later, polyethylene.

The extraction plant processes 400 million cubic feet of natural gas per day. Daily production of propane, butane, isobutane, and natural gasoline totals 450,000 gallons, and is distributed by Phillips Petroleum Company.

Average annual minimum temperatures are shown on the above map, adapted from one by the U. S. Weather Bureau. On the average, lower temperatures occur about every other year.

CONTINUED *Anti-Freeze*

bustion gas leaks into the coolant, rust deposits, etc., all bring about chemical changes which deplete inhibitors and increase corrosive conditions within the cooling system. When this happens, rust formations, sludge resulting from oil leaks, and debris resulting from erosion of hoses eventually can clog enough of the radiator to reduce its effective capacity to the danger point. Thus the few cents saved by saving the same anti-freeze through several seasons can easily turn out to be a false and very expensive economy.

Facts Confirmed by Bureau of Standards

In the words of Government scientists (U.S. Bureau of Standards Circular 506), anti-freeze "is continually depleted by use, and will eventually reach a corrosive condition. In view of the comparative cost of anti-freeze and of even so minor a replacement part as a water pump or radiator, it is certainly cheaper to use new solutions (of anti-freeze) each year."

In its educational effort, U.S.I. is bringing this message to anti-freeze users in a manual and in consumer advertisements for its time-tested anti-freeze products, U.S.I. Permanent Anti-Freeze and U.S.I. Super Pyro Anti-Freeze. Both of these favorites are again being offered through dealers across the country for complete coverage of the car owner's anti-freeze requirements. But first, for an entirely worry-free winter, U.S.I. strongly advises that every cooling system be drained and flushed before new anti-freeze is put in.

Employee Safety Outlined

Instructions in safe work habits, applicable to employees in most plants, are outlined in a new 32-page employee rules manual. The practical experiences of workers, supervisors, and safety specialists have established the safe practices covered, beginning with a list of general safety regulations and continuing with special sections on gas cylinders and compressed air, protective clothing, fire prevention, materials handling, and other related topics.

Prove Methionine Adds $$ to Broiler Profits

Recent experimental work at a leading university has shown in dollars and cents what the addition of methionine to poultry feed can mean to the commercial poultry grower. In broiler trials under field conditions, additions of 0.05% DL-methionine (one pound per ton) to the feed resulted in more rapid growth, greater feed efficiency, and better feathering during a 10-week growing period than was observed in birds receiving no supplementary methionine. At the end of the period, these improvements added up to an average increased return over feed costs of $26.88 for each thousand broilers marketed, according to the report.

Use Vacuum Sublimation In New Industrial Process

Sublimation at reduced pressures has been adapted industrially to separation and purification of certain chemicals, according to a recent announcement. The method was evolved from experience with freeze-drying in the preparation of various biologicals and vaccines. It is now being used in the production of several pure chemicals, including salicylic acid, in quantities of several tons per day, it is said.

In using vacuum sublimation, the impure product is placed in a closed, jacketed vessel, pressure is reduced by a vacuum pumping system, and the charge is heated. By manipulating pressures and temperatures, certain portions of the mixture can be made to volatilize and pass off through the line. For some products, the one desired will sublime and pass off; in other cases, impurities will volatilize, leaving the pure product behind.

TECHNICAL DEVELOPMENTS

Information about manufacturers of these items may be obtained by writing U. S. I.

Returning Wastes to the Soil—booklet recently issued emphasizes the importance of this subject, discusses some of the problems involved and some of the methods used to solve them. **(No. 970)**

A new insulation applied like paint is claimed to bond to shaped surfaces in a seamless, continuous cover, can be used inside and out to stop about 80% of radiated heat passage. **(No. 971)**

A new air purifying machine operates on a patented washed air principle, is small in size, and is said to remove 92% of pollen and dust. Capacity is 200 cubic feet of air per minute. **(No. 972)**

To make standard tire inner tubes puncture-proof, a latex compound is now marketed in a tube which is screwed onto the tire valve, the contents squeezed inside the inner tube, and the tire re-inflated to normal pressure. **(No. 973)**

A Greek lettering guide recently made available consists of a plastic template engraved with ¼-inch upper and lower case letters to make hand lettering of Greek symbols easy and uniform. **(No. 974)**

To solder aluminum with any plain solder, tin, lead, zinc, cadmium, and alloys of these metals, a new non-corrosive paste flux is said to allow use of any torch or soldering iron, is available for both industrial and home use. **(No. 975)**

A one-piece adjustable work tower for overhead maintenance work such as painting, lighting and cleaning, telescopes up and down, is easily moved into place, and is equipped with removable outrigger legs for greater stability, the manufacturer states. **(No. 976)**

A substitute for ice is available in sealed vacuum cans, each of which when frozen is reportedly equivalent to 3 pounds of ice in refrigerating value. Product can be re-used many times, is expected to be useful to sportsmen and in photography and laboratory storage. **(No. 977)**

A new catalytic air-cure coating, completely impervious to all known aircraft hydraulic fluids, alcohols, esters and petroleum hydrocarbons, comes in corrosion-resistant primer and full gloss colors for use on all metals and woods. **(No. 978)**

To protect metals against flame temperatures hotter than their melting points, a new "paint-like" material is reported to be effective for as long as 10 seconds. Compound withstands lower temperature cycles indefinitely, it is said. **(No. 979)**

PRODUCTS OF U.S.I.

ALCOHOLS
Amyl Alcohol (Isoamyl Alcohol)
Butanol (Normal-Butyl Alcohol)
Fusel Oil — Refined
Propanol (Normal-Propyl Alcohol)

Ethanol (Ethyl Alcohol)
Specially Denatured—all regular and anhydrous formulas
Completely Denatured—all regular and anhydrous formulas
Pure—190 proof U.S.P., Absolute—200 Proof
Solox*—proprietary solvent—regular and anhydrous

ANTI-FREEZE
Super Pyro* Anti-Freeze
U.S.I. Permanent Anti-Freeze

ETHERS
Ethyl Ether, U.S.P.
Ethyl Ether, Absolute—A.C.S.

ACETONE—A.C.S.

ANSOLS
Ansol* M
Ansol* PR

ACETIC ESTERS
Amyl Acetate—Commercial and High Test
Butyl Acetate
Ethyl Acetate—all grades
Normal-Propyl Acetate

OXALIC ESTERS
Dibutyl Oxalate
Diethyl Oxalate

PHTHALIC ESTERS
Diamyl Phthalate
Dibutyl Phthalate
Diethyl Phthalate

OTHER ESTERS
Diatol*
Diethyl Carbonate
Ethyl Chloroformate

RESINS (Synthetic and Natural)
Arochem*—modified types
Arodure*—urea-formaldehyde resins
Arofene*—pure phenolics
Aroflat*—for special flat finishes
Arofint*—room temperature curing phenolic
Aroplaz*—alkyds and allied materials
Aropol*—copolymer modified alkyds
Ester Gums—all types
Natural Resins—all standard grades

INSECTICIDE MATERIALS
Allethrin
CPR Concentrates: Liquid & Dust
Piperonyl Butoxide
Piperonyl Cyclonene
Pyrenone* Concentrates: Liquid & Dust
Pyrethrum Products: Liquid and Dust
Rotenone Products: Liquid and Dust

INSECTIFUGE MATERIALS
Indalone*
Triple-Mix Repellents

INTERMEDIATES
Acetoacetanilide
Acetoacet-ortho-chloroanilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloroanilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate

FEED PRODUCTS
Calcium Pantothenate (Feed Grade)
Choline Chloride
Curbay B-G* 80
DL-Methionine (Feed Grade)
Niacin, U.S.P.
Riboflavin Concentrates
Special Liquid Curbay*
U.S.I. Vitamin B_{12} and Antibiotic Feed Supplements
Vacatone* 40

OTHER PRODUCTS
Acetaldehyde
Caustic Soda
Ethylene
IPC (Isopropyl-N-Phenyl Carbamate)
CIPC
Liquid Chlorine
Metallic Sodium
Methionine (Pharm.)
N-Acetyl DL-Methionine
Nitrocellulose Solns.
Propionaldehyde
Propionic Acid
Sulfuric Acid
Urethan, U.S.P.

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phate, visammin (khellin), heparin, and bishydroxycoumarin (Dicumarol) appeared unimpressive when evaluated according to this method. (5) Ethyl alcohol, in one to two ounce amounts, consistently fails to influence the electrocardiographic response to exercise, although it does prevent or reduce the severity of anginal pain. Alcohol should, therefore, be recognized as a rapidly acting sedative and should no longer be regarded as a coronary vasodilator drug. Morphine is identical to alcohol in its effect on pain and in its failure to modify the exercise response. (6) Of the drugs tested, only glyceryl trinitrate, papaverine, and pentaerythritol tetranitrate appear worthy of continued clinical use as vasodilators in the management of angina pectoris.

Hormone Combination for Menopause

E. Juster and E. Guiard (*Presse Med.* 61:365, 1953) report that the administration of combined estradiol, progesterone, and testosterone, intramuscularly or in the form of lozenges to be dissolved under the tongue, to patients with menopausal disturbances produced results equivalent and in some cases superior to those of intensive estrogen therapy, without the undesirable side-effects of synthetic estrogens. Treatment can readily be adjusted to the patient's requirements, and may be continued for long periods without exposing her to the dangers of hormone supersaturation. Hot flashes, severe psychic manifestations, and metabolic disturbances disappear rapidly, and the patient recovers the vitality and balance of character and feeling she had before the menopause. The injectable preparation contains estradiol, 3 mg., progesterone, 20 mg., and testosterone propionate, 25 mg., dissolved in 1 cc. of oil. Injections are needed every one or two weeks at first, but as treatment progresses and the patient's condition improves, the intervals may be lengthened. Patients who have been treated with the combined hormones are unwilling to return to synthetic estrogen therapy, which often produces disagreeable side-effects. Oral administration of lozenges containing ethinylestradiol, 0.005 mg., anhydroxyprogesterone, 5 mg., and methyltestosterone, 2.5 mg., is equally effective and very convenient. The initial dose may consist of from 3 to 5 lozenges daily, but later one or two will usually suffice to maintain the patient in normal neuroendocrine balance. Use of the combined sex hormones in premenopausal patients with normal or subnormal menstrual cycles is not indicated.

New Antitussive Agent

An investigation was carried out by L. J. Cass and W. S. Frederik (*New England J. Med.* 249:132, 1953) in 65 patients to appraise the merits of 4 mg. of dextro-3-methoxy-N-methylmorphinan hydrobromide (dextromethorphan hydrobromide) as an antitussive agent. The study included comparative trials with codeine sulfate, 17 mg. and placebo medication. Each of the three materials was supplied under three different code designations—a total of nine unknowns, all of identical appearance and taste. These were administered for five days each, a total observation period of forty-five days. The medications were given in a random sequence. The cough-suppressing activity of the drugs was recorded by means of a numerical scale.

After aggregating more than 11,000 observations and reducing them to simplest terms, the investigators made an attempt to identify the materials. Seven of the nine unknown were thus identified correctly. Mathematical treatment of all data revealed that the three groups of drugs showed statistically significant cough-suppressing properties. The antitussive effectiveness of 4 mg. of dextromethorphan hydrobromide was approximately half that of 17 mg. of codeine. The incidences of side effects of dextromethorphan hydrobromide at the dosage level used and of placebo tablets were of the same order of magnitude. However, the incidence of reactions to codeine was distinctly higher. Hence it is concluded that dextromethorphan hydrobromide is an effective antitussive agent and is free of side effects.

Poison Oak Protective Cream

R. E. Strauss and C. R. Bruck (*J. Investig. Dermat.* 20:111, 1953) have made an investigation on the use of a cream containing four per cent zirconium hydrate and two per cent pyribenzamine hydrochloride in a water-soluble base as a prophylactic against poison oak. In these controlled studies; which included a total of 906 men, application of this cream to the hands, forearms, face and neck of men being exposed to rhus diversiloba under actual field conditions, reduced the incidence of poison oak dermatitis from 21.2 per cent to 9.6 per cent. Most of the cases of poison oak dermatitis in the group which used zirconium-pyribenzamine cream first appeared on the legs and genitalia (which were not protected). In the control groups, the initial dermatitis occurred equally over the arms, face, legs or genitalia. Probably the incidence of poison oak dermatitis could have been further reduced if the zirconium-pyribenzamine cream had been applied to all portions of the body.

The investigators state that it cannot be determined from this study whether the results are due to the zirconium, the pyribenzamine, or a combination of the two agents. Further studies are now under way using zirconium incorporated in a lotion for both the prophylaxis and treatment of poison oak dermatitis. Dermatologic experience indicates that a lotion is a more suitable preparation for treatment of acute eczematous eruptions.

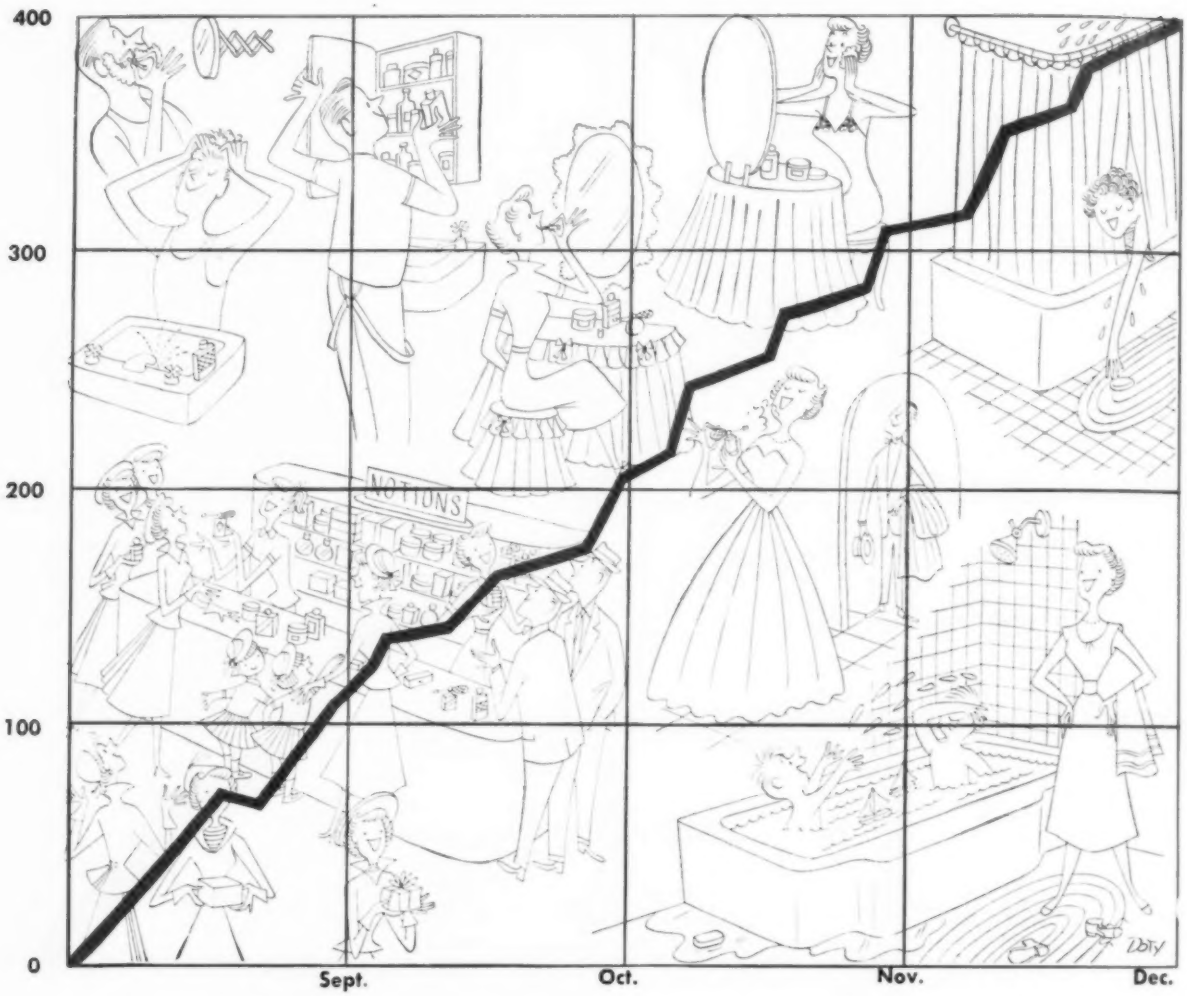
Reducing Penicillin Injections in Children

For small children, say S. A. Doxiadis and K. S. Hold (*Lancet* 2:376, 1953) it is clearly desirable to decrease the frequency of injections as much as possible. With this thought in mind the duration of therapeutic serum-penicillin levels (0.06 or more units per ml.) has been studied in 36 children given single doses of procaine penicillin with aluminium monostearate intramuscularly as follows:

5 infants	450,000 units
14 children aged 1-4 years	600,000 units
8 children aged 5-10 years	900,000 units
9 children aged 11-14 years	1,200,000 units

With these dosages effective serum-penicillin levels were maintained in infants for at least 84 hours; in children aged 1-4 years for at least 72 hours; in children aged 5-10 years for at least 60 hours; and in children aged 11-14 years for at least 48 hours. In the two older age-groups such large doses are not justified, because similar results have been achieved by other workers with smaller doses. There were no general reactions to these injections. Locally there was a small lump for a few hours, but all these lumps were absorbed without any sequelae.

It was found that with these dosages and intervals procaine-penicillin therapy is very little, if any, more troublesome, either to doctor or child, than oral therapy. Hence, Doxiadis and Holt feel that this type of therapy should be substituted for oral penicillin.



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Compounder's Corner

Benzalkonium Chloride Preparations

Several preparations containing the quarternary ammonium compound, benzalkonium chloride, are presented in the May-June, 1953 issue of the *Bulletin American Society of Hospital Pharmacists*. Thus, a solution for instrument sterilization may be prepared as follows:

Benzalkonium chloride, 10 per cent solution	**80 cc.**
Sodium nitrate	**20 Gm.**
Sodium bicarbonate	**40 Gm.**
Mint green color	**4 drops**
Distilled water, to make	**4000 cc.**

A hand lotion, suggested by H. Flack, is given as follows:

Glycerine	**570.00 cc.**
Alcohol, 95 per cent	**570.00 cc.**
Carboxymethylcellulose (low viscosity)	**38.00 Gm.**
Amaranth solution, U.S.P.	**1.00 cc.**
Coumarin	**0.04 Gm.**
Benzalkonium chloride, 10 per cent solution	**4.00 cc.**
Distilled water, to make	**3800.00 cc.**

Heat 2,655 cc. of the water to boiling and add the carboxymethylcellulose. Cool in a refrigerator. Dissolve the coumarin in the alcohol; add this to the benzalkonium chloride solution and the amaranth solution. Combine the two solutions and mix well.

A benzalkonium chloride mouth wash may be made from:

Benzalkonium chloride, 10 per cent solution	**6.00 cc.**
Saccharin sodium	**0.45 Gm.**
Amaranth	**0.20 Gm.**
Cinnamon	**2.00 cc.**
Polyoxyethylene sorbitan monolaurate (Tween 20*)	**11.90 cc.**
Distilled water, to make	**1000.00 cc.**

(*Atlas Powder Co., Wilmington, Del.)

Add the saccharin and amaranth to about 900 cc. of water. Mix the cinnamon oil and Tween 20 and add this to the aqueous solution. Add the other ingredients and dilute to volume with water. Mix well and filter. When diluted with two parts of water, this makes a 1:5000 solution of benzalkonium chloride.

A method of preparing a benzalkonium chloride concentrate solution is given as follows:

Benzalkonium chloride, 10 per cent solution	**3,140 cc.**
Sodium nitrite	**450 Gm.**
Dye concentrate	**175 cc.**
Water, to make	**19,000 cc.**

Add the nitrite to about half the water, incorporate the dye solution, the benzalkonium chloride and sufficient water to bring to volume. Filter and package in 240 cc. (8 ounce) bottles. When this quantity is diluted to one gallon, a 1:4000 benzalkonium chloride solution results.

It is noted that many dyes may be used in the above preparation, but care should be taken to avoid a dye that may inactivate the quaternary ammonium compound. A suitable green coloring concentrate may be made from:

F. D. & C. Blue No. 1	**1.300 Gm.**
Limecone Yellow*	**2.500 Gm.**
Methylparaben	**0.026 Gm.**
Propylparaben	**0.014 Gm.**
Distilled water, to make	**100.000 cc.**

(*National Aniline Division, Allied Chemical and Dye Corp., New York, N. Y.)

Denture Cleaner

It is suggested in the *Chemist and Druggist* (160:72, 1953) that a denture cleanser can be made from:

Sodium perborate	**240 gr.**
Sodium chloride	**480 gr.**
Exsiccated magnesium sulfate	**30 gr.**
Calcium chloride	**30 gr.**
Anhydrous sodium carbonate	**30 gr.**
Methyl salicylate	**1 min.**
Menthol	**2 gr.**
Peppermint oil	**12 min.**

To use, dissolve a small portion in water, and allow the dental plate to remain in in the solution overnight. It should be noted that cellulose acetate type dentures are decomposed by alkaline substances. Formaldehyde and phenol formaldehyde types withstand most chemical agents.

Emulsified Cleansing Lotions

In *Schimmel Briefs* (No. 214) it is noted that, for removing make-up, some women may prefer an oily emulsified lotion to the usual cold cream or liquefying cream. The proportion of mineral oil in cleansing lotions is lower than is ordinarily used in cold creams. However, it is possible to incorporate up to 30 per cent of mineral oil in a liquid emulsion, as in the following formula for a liquid cleansing cream:

Diglycol laurate S*	**10.0 parts**
Mineral oil	**30.0 "**
Preservative	**0.1 part**
Perfume	**0.6 "**
Water	**59.3 parts**

(*Self-emulsifying.)

A cleansing lotion may be made from:

Oil Phase:

Stearic acid XXX	**2.0 parts**
Mineral oil 65/75	**15.0 "**
Propyl p-hydroxybenzoate	**0.1 part**
Isopropyl myristate	**2.0 parts**
Polyethylene glycol 400 monostearate	**10.0 "**
Lanolin	**5.0 "**
Beeswax	**8.0 "**
Propylene glycol	**5.0 "**

Aqueous Phase:

Triethanolamine	**1.0 part**
Water	**51.9 parts**

The procedure for making bath products is essentially the same and is as follows: Place all oils and oil-soluble ingredients in one container and heat to 70° C. Heat the water and any water-soluble ingredients in another container to the same temperature. Add the aqueous solution slowly to the oil phase with high speed stirring. Add perfume when the mixture has cooled.

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Sugar-Based Dipilatory Cream

A rather interesting depilatory cream is described by V. Cimino in Italian patent 467,409 (through *Chem. Abstr.* 47:4053, 1953). In his method for making such a product, 50 Gm. of sugar is mixed with enough lemon juice to dissolve the sugar. To this is added one Gm. of beeswax and two to three Gm. of honey. The mixture is cooked slowly until caramel is formed, allowed to cool and then applied to the skin.

Conspergents for Enteric Coatings

In reporting on their *in vitro* evaluation of conspergents on selected enteric coatings, D. B. Hawkins and H. O. Thompson (*J. A. Ph. A.*, Scient. Ed. 42:424, 1953) point out that an efficient enteric coating is one that is stable in the stomach for five hours, and disintegrates in the intestine, preferably within one hour. In addition to the satisfactory disintegration, a coating should have a good appearance, be adaptable for use commercially, be easy to apply, economical, and remain stable under normal storage conditions.

The available evidence indicates that the selection of a conspergent is of great importance in the field of enteric coatings, for the purposes of improving the appearance and bringing about selective disintegration in the desired portion of the digestive tract. Water-soluble substances and powders which react in the acid medium of the stomach would be unsatisfactory for use because of the tendency to cause disintegration before the tablet or pill reaches the intestine. For this reason, an inert powder or one which has a tendency to dissolve or become emulsified in the intestinal juice should be selected. Since a study of the physiology of the digestive tract indicates that the intestinal contents vary from distinctly acid to slightly alkaline a conspergent which is effective in alkaline and acid media should be chosen.

With these considerations in mind, Hawkins and Thompson made a study of the conspergents available which may be suitable for use with enteric coating solutions. The selection was based on appearance, solubility, availability, and mobility. Two powders, talc and subcoating dusting powder, were employed for use with two enteric formulas. The subcoating powder consisted of 48 Gm. precipitated calcium carbonate, 25 Gm. of corn dextrin, 2 Gm. of talc, and 25 Gm. of powdered sugar. It was recommended for use with cetyl alcohol, sandarac, tolu coating, while talc was used with shellac coating. The other conspergents used were: kaolin; bentonite; Magnesol (a commercial form of magnesium trisilicate); magnesium trisilicate; tertiary magnesium phosphate; magnesium oxide; magnesium stearate; calcium stearate; aluminum stearate; aluminum palmitate; Dry-Flo starch (a non-wettable starch manufactured by National Starch Products); ethyl *p*-aminobenzoate; methylparaben; and *n*-propyl-paraben.

Consideration of the physical properties of the conspergents led to the conclusion that specific gravity and melting point had little influence, and that particle size, crystalline structure, chemical composition, mobility, and solubility may have determined to some extent the results. It was also found that the amount of powder required for a satisfactory coating varied with the enteric solution and the powder employed. The appearance and behavior of each enteric coating varied with the solution and conspergent. However, it was observed that magnesium stearate, calcium stearate, talc, and aluminum palmitate were more satisfactory than the other conspergents employed.

Noting that the efficiency of the enteric coatings was not entirely a function of thickness, Hawkins and Thompson also remarked that the number of applications necessary for an enteric coating varied with the substances used. Twenty applications were needed for a stearic acid, mutton tallow coating, sixteen for shellac, and six (three applications of each of the two solutions) for a cetyl alcohol, sandarac, tolu coating. Shellac coatings were satisfactory on conventional-shaped tablets with talc, magnesium stearate, calcium stearate, and aluminum palmitate; stearic acid, mutton tallow, balsam tolu, sodium taurocholate was satisfactory with calcium stearate; and calcium stearate was the only satisfactory conspergent with a cetyl alcohol, sandarac, tolu coating.

Stable Ascorbic Acid Ampoules

In discussing the preparation of stable five per cent solutions of ascorbic acid in ampoules, A. A. Gellerova (*Aplechnoe Delo* 2:33, 1953 through *Chem. Abstr.* 47:8319, 1953) remarked that decomposition of solutions of ascorbic acid appears to depend upon other factors besides the concentration of oxygen in the solution. Complete removal of the oxygen by flushing with carbon dioxide cannot be attained readily, but a residual content of 0.18 mg. per liter is low enough to permit the production of stable ampoule preparations. Addition of stabilizers, such as 0.005 per cent thiourea or 0.75 per cent sodium chloride permits storage for 12 months. The effect of heat on the stability of the solution is smaller, the lower the residual oxygen concentration. At low oxygen levels, in a carbon dioxide atmosphere, the solutions show almost no decomposition during sterilization for 30 minutes. Storage in the dark is not necessary.

Palatable Paraldehyde Mixture

In view of the unpleasant nature of paraldehyde from the patient's point of view, and the difficulties encountered in its dispensing, M. F. Phillips (*Pharm. J.* 169:206, 1952) submits the following mixture as an aid in overcoming these difficulties:

Paraldehyde	**720 minims**
Emulsion of oil of peppermint	**60 minims**
Syrup	**3 fl. oz.**
Tragacanth, in powder	**15 grains**
Synthetic green colouring	**5 minims**
Water, to make	**12 fl. oz.**

In this mixture the burning "taste" of the paraldehyde is associated with the peppermint flavor, and thus is rendered less objectionable. The finished mixture presents a fairly elegant appearance, a slight shake being sufficient to disperse the medicament evenly.

Latex-Containing Lotion

A lotion containing latex is described by N. Takeuchi in Japanese patent 7400 (through *Chem. Abstr.* 47:5082, 1953). It is prepared by mixing two solutions; the first consisting of the following mixture, allowed to stand for 24 hours:

Ethyl alcohol	**5.0 Gm.**
Glycerine	**3.0 Gm.**
Sodium higher alcohol sulfonate, 0.5 per cent solution	**4.0 Gm.**
Water	**22.5 Gm.**
Perfume	**sufficient**

The second part contains:

Latex, 40 per cent	**12.5 Gm.**
Sodium higher alcohol sulfonate, 0.5 per cent solution	**6.5 Gm.**
Water	**40.0 Gm.**

Allow to stand for two hours and then mix the two solutions.

Industry's Books

(*Continued from Page 527*)

Sanitary Chemicals, by Leonard Schwarcz, 576 pp., Illus., (1953), Mac Nair-Dorland Co., New York, Cloth, $8.

This book originally was written to create a better understanding of the importance of sanitary products and their relationship to national health and the general well-being of the community. It is a practical handbook dealing with disinfectants, household and industrial insecticides, floor waxes, soap and cleaning specialties, deodorants, and other sanitary chemical products,—their manufacture, testing, packaging, labeling, and most effective use. Its contents include: Bacteria and Disease: Principles of Disinfection: Coal Tar Disinfectants: Cresol Compounds: Pine Oil Disinfectants: Hypochlorites (Chlorine Disinfectants); Quaternary Ammonium Disinfectants: Disinfectant Testing: Deodorants: Man Versus Insects: Pyrethrum Insecticides: Rotenone Insecticides: Synthetic Insecticides: Livestock and Barn Sprays: Bedbug Liquids: Cockroach Control: Moth Preparations: Aerosols: Insecticide Testing: Rodenticides: Floor Waxes: Sweeping Compounds: Potash Soaps: Liquid Soaps: Detergents and Cleaners: Surface Active Agents: Labeling and Packaging: Appendix.

Ion Exchangers In Analytical Chemistry, by Olof Samuelson, Professor of Engineering Chemistry, Chalmers Institute of Technology, Goteborg, Sweden, 291 pp., John Wiley & Sons, Inc., New York, (1953), Cloth $6.50.

This book explains this rapid and simple method to: produce more reliable analytical results—find new methods for analyzing technical products and substances—purify analytical reagents—recover valuable reagents—use ion exchangers for analytical separations. Divided into three parts, the treatment is comprehensive, giving a complete, progressive explanation of the ion exchange method. The first part—general—is a thorough discussion of the fundamental properties of ion exchange resins, ion exchange equilibria, and kinetics. The second part—practical—treats the techniques of simple ion exchange separations for analytical purposes and ion exchange chromatography. Then the last and major part of the book—applications—deals with practical applications of the ion exchange method in three divisions within the science: inorganic analysis; organic analysis; and biochemical analysis. The remaining two chapters investigate the complex salts and miscellaneous applications not treated elsewhere in the text.

Dermatology in General Practice, by Jacob Hyams Swartz, M.D., Assistant Professor of Dermatology, Harvard Medical School, 581 pp., Illus., (1953), The Williams & Wilkins Co., Baltimore, Cloth, $11.

This is a really practical guide to accurate diagnosis and successful treatment of the seemingly endless variety of disorders to which the skin is subject. The author's approach to the subject is strictly clinical and his style is simple. His chapters are arranged in logical order—beginning with the simpler facts and progressing to the essential information about hundreds of the common skin diseases usually met in daily practice. For each disease there is a complete and true-to-life clinical picture that can be readily identified. Simplified rules for differential diagnosis and practical instructions for specific treatment have been included. The work is divided into the following main groupings: I—General Considerations. II—Care of the Normal Skin. III—Care of the Abnormal Skin. IV—Diseases of the Hair and Scalp. V—Skin Diseases of the Face. VI—Skin Diseases of the Trunk. VII—Skin Diseases Involving the Extremities. VIII—Mycotic Infections. IX—Exanthemata. X—Syphilis. XI—Miscellaneous. Index.

An Atlas of the Commoner Skin Diseases, (With 147 Plates Reproduced by Direct Color Photography from the Living Subject), by Henry C. G. Semon, M.A., D.M. Oxon., F.R.C.P. London, Consulting Physician for Diseases of the Skin, and former Lecturer to Postgraduates, Royal Northern Hospital, Color Photography originally directed by the late Arnold Moritz, B.A., M.B., B.C. Cantab., Fourth Ed., (1953), The Williams and Wilkins Co., Baltimore, 370 pp., Cloth, $13.50.

The purpose of this Atlas is to portray from the living subject, and in natural color, a collection of the dermatoses most frequently seen in the routine of outpatient practice. Abbreviated clinical descriptions, the differential diagnoses where considered essential, and the outlines of treatment are presented in an easily accessible position with regard to each plate. These should be considered as accessory to, and not substitutes for, the detailed study of actual cases. If they are employed with this reservation, they will afford valuable help in diagnosis. The more experienced may utilize them to refresh their recollections of differential diagnosis and the established lines of treatment. To facilitate rapid reference, the various diseases have been grouped in alphabetical order, with the exception of some of the less common, which are arranged at the end.

The Conception of Disease, Its History, Its Versions and Its Nature, by Walther Riese, M.D., 120 pp., Philosophical Library, New York, (1953), Cloth, $3.75.

Although the various conceptions of disease succeeded one another in the course of time, and each one represents the particular period of civilization which formed it, they have never completely passed out of existence, but live on side by side at every stage of the history of man and medicine. These conceptions are analyzed in their original setting. The part played by civilization in disease is treated in its anthropological and moral implications. Special chapters are devoted to the relationship between art and disease and Leonardo da Vinci's contributions to the genesis of the anatomical conception of disease. The author finally brings up the problem of the justification, the use and the limitations of the various conceptions of disease.

Formaldehyde, by J. Frederic Walker, Chemical Research Div., Electrochemicals Department, E. I. du Pont de Nemours & Co., Inc., American Chemical Society Monograph Series, No. 120, Second Ed., 575 pp., Book Div., Reinhold Publishing Corp., New York, (1953), Cloth, $12.

Now completely revised, this new edition of Walker's widely-known monograph offers a modern, systematic summary of the manufacture, properties, chemical reactions and uses of formaldehyde. Special attention is devoted to such important aspects as physical and thermodynamic properties, methods of production, handling characteristics, the analysis of commercial formaldehyde solutions and polymers, the formation of hexamethylenetetramines, and all latest industrial applications. The numerous advances in formaldehyde chemistry and technology since publication of the previous edition are covered in full detail, and separate chapters deal with the latest known reactions of formaldehyde with various types of chemical compounds.

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Perfumer's Shelf

Almond Flower Perfume

In investigations made by M. G. Igolen (*Bull. soc. chim. France*, 1953, p. 306) extraction of the flowers of the almond tree with petroleum ether gave 0.0128 to 0.0135 per cent of a waxlike concrete essence, from which alcohol extracted 42 per cent of a sirupy absolute essence. Distillation of this material with superheated steam gave 12 per cent essence. The phenols and free acids were removed with three per cent sodium hydroxide solution, from which the phenols, cresol, and eugenol were precipitated with carbon dioxide. Caproic and phenylacetic acids were isolated. On saponification with one per cent alcoholic potassium hydroxide, the neutral part of the essence gave 1-decanol, geraniol, and phenylethyl ether. Acetic acid was the only combined acid.

Cheilitis from Cinnamon Oil

Dermatitis caused by cinnamon or cinnamon oil is a relatively rare entity, according to J. L. Laubach, F. D. Malkinson and E. J. Pingrose (*J.A.M.A.* 152:404, 1953). The case presented by these dermatologists is of particular interest because it is believed to be the first reported case of cheilitis caused by synthetic cinnamon oil used as a flavoring agent in tooth paste. Patch tests with various cosmetics and tooth pastes established that an ammoniated tooth paste was the causative agent and, further, that synthetic cinnamon oil, one of the constituents, was the specific causative agent. Complete cure of the lesions followed cessation of use of the tooth paste.

It is of interest to note, say Laubach and his colleagues that, although the skin was sensitized by the use of the tooth paste, as evidenced by the positive patch tests, the subsequent use of cinnamon powder did not result in any signs or symptoms of dermatitis. This may possibly be explained by the fact that true cinnamon powder is produced from the bark of *Cinnamomum zeylanicum* (Ceylon cinnamon), whereas cinnamon oil is the volatile oil distilled from leaves and twigs of *Cinnamomum cassia* (Chinese cinnamon). Two oils of cinnamon are used in commerce; one produced from Ceylon cinnamon and the other from the Chinese cinnamon. The latter is the only official one at this time. It is used as a flavoring agent and also as a preservative to prevent mold growth. Cinnamon oil is incorporated in the official preparations of compound vanillin elixir, and aromatic cascara sagrada fluidextract.

Oil of Sesili Indicum

The nature and composition of the essential oil of *Sesili indicum* have been determined by G. S. Gupta and M. O. Farooq (*Current Sci.* 22:46, 1953). Steam distillation of the finely powdered dry seeds yielded 2.5 per cent of a limpid, almost colorless oil which had an aromatic odor and clove-like taste. The thin, acidic oil had the following properties:

Specific gravity	0.8905
Specific rotation	34.7
Index of refraction	1.48214
Acid number	3.1
Ester number	30.0
Saponification number	33.1
Saponification number, after acetylation	64.6

The oil consists of 45 to 50 per cent of terpenes (mainly limonene), two per cent of acids, and 1.5 per cent of lactonic and phenolic substances. The oil also contains some sesquiterpenes and sesquiterpene alcohols, as well as some other alcohols, esters and acids.

Eucalyptus Oils

It is noted in *Perfumery and Essential Oil Record* (44:199, 1953) that there are over 500 species and 138 varieties of the Eucalypt genus, of which about 180 have been examined for essential oils. Of these, only about 20 yield oils of commercial value. Therefore it was not until this interesting group of trees was scientifically studied that it was possible for the industry to be established on economic lines.

Many of the species yield oil containing cineol in varying quantities, up to 85 per cent or more. *Eucalyptus polybractea*, or Blue Mallee, yields one of the finest quality oils. It is, therefore, used extensively for commercial purposes and in the manufacture of pure eucalyptol.

As may be expected, there is a wide range in the composition of the essential oils among the 500 species of Eucalypts. Besides the oil used for medicinal purposes, the essential oils from the genus Eucalypts have an equally wide application in their uses, from the separation of minerals by the "flotation" process in the mining industry to the manufacture of synthetic menthol, thymol and otto of rose. Oil of *E. citriodora* and oil of *E. Macarthuri* are used in the perfumery and soap industries, while oils containing phellandrene are also used in the manufacture of disinfectants, on account of their high germicidal value.

Oil of Cedrus Deodara

The essential oils from the wood of the Himalayan deodar, *Cedrus deodara*, has been examined by G. S. Krishna Rao, S. Dev and P. C. Guha (*J. Ind. Chem. Soc.* 29:721, 1952). Samples of wood from Kangra in the East Punjab yielded 10.54 per cent of a pale yellow volatile oil with the following properties:

Specific gravity	0.9277
Refractive index	1.5095
Optical rotation	76° 66′
Acid value	0.065
Ester value	3.85
Acetyl value	5.6

The sample of clear aqueous distillate readily gave the iodoform reaction, indicating the probable presence of a methyl-ketone group. On treatment with dinitrophenyl-hydrazine reagent the solid derivative obtained was identified, after repeated purification, as 2:4-dinitrophenyl-hydrazone of *p*-methyl-acetophenone. Fractionation through a packed column yielded 32 fractions. Two methyl-acetophenones were obtained from fractions 1 and 2. The physical properties of fractions 4 to 29 show that they are chiefly composed of sesquiterpenes. The presence of at least two hydrocarbons is indicated: one levo- and the other strongly dextrorotatory. For the isolation of pure

TOP NOTES by Fritzsche

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A THOUGHT for the Month:

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—H. G. WELLS

FLOWER of the Month

September—Aster or Morning Glory

October—Calendula or Cosmos

MAYBE YOU KNOW HIM . . .

TFRED BAKER, Jr., (the "T" is for Thomas) had seen a good part of the world before he came to Fritzsche Brothers. He was born in Regina, Saskatchewan of American parents, attended grade and high schools in Englewood, N. J., and before graduating from the latter spent two summers on a tanker plying between U. S., Canadian and South American ports. He majored in bacteriology and chemistry at Michigan State College and after graduation served five years as an officer in the Army Medical Corps both here and abroad. At the war's end he came to Fritzsche and has since represented us in New York, Chicago, Detroit and now Boston. In a territory reputedly hard-to-sell, Fred's mild, unhurried approach, his fine technical knowledge of the products he represents and his ready grasp of the problems with which his customers are confronted have gained him the confidence and respect of some of New England's most prudent buyers. He likes sports of all kinds, finds relaxation in gardening, but of all his interests, his children —Ann, Freddie, Mary—and his wife, Helen, come first.

RECOMMENDATION of the Month

SULTAIRE

We predict that some alert manufacturer will adopt this provocative new fragrance and make a conspicuous success of the product in which it is used. For SULTAIRE is an intriguing perfume—a deep, rich, sultry Oriental with a fruit-like overtone. It is essentially a fragrance with type appeal . . . to those who like it, it will be irresistable. SULTAIRE bears examination! Priced at $30.00 lb.; trial half ounce—$1.00.

ANIMAL FIXATIVES

The fine art of perfuming has its roots deeply embedded in the early cultures of the East. It was the Oriental perfumer, centuries past, who first discovered the strangely seductive characteristics imparted by the odorous glandular secretions of certain animals when added dilute to their perfumed oils and unguents. Still, today, nothing quite matches the finer distinctions of odor and fixation which these genuine substances, now numbering four—civet, musk, castoreum and ambergris—impart, each in its own peculiar way, to the finished composition. Closest approach, however, to this ideal of perfume subtlety and fixation will be found in the following artificial substitutes for these costly and more or less scarce or virtually unobtainable natural materials:

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levo-sesquiterpene cuts 5 to 8 were selected, and a pure hydrocarbon obtained of constant physical properties, representing a new sesquiterpene, for which the name α-himachalene is proposed. Another compound β-himachalene was also obtained, properties of which are tabulated, together with an alcohol probably related to the terpene and named himachalol.

Mysore Linaloe Oil

In his report on Indian linaloe oil, S. G. Sastry (*Soap* 6:3, Feb. 1953) points out that every part of the linalol tree contains oil. The analytical constants vary to a considerable extent, however. This is easy to understand since the character of the oil is likely to change as the leaves mature from the tender bud stage to the stage of fully matured leaves. In India, the berries with the husks of the linaloe tree are distilled in Mysore State for the essential oil. It has been found that this oil differs to some extent in chemical and physical constants from the normal oil from Mexico which is distilled from the heartwood, even though both the plants are botanically identical. The yield of oil from the wood in Mexico is reported to be any where between 2.5 to three per cent. The wood is stated to yield from seven to nine per cent of oil when distilled in Europe. The yield from the berries or the husks of the berries collected in Mysore State come up to about 18 per cent.

In the investigations reported by Sastry, the husks, on steam distillation, furnished 18.1 per cent of oil the constants of which are as follows:

Specific gravity	**0.8989**
Optical rotation	**−4.68°**
Refractive index	**1.455**
Acid value	**0.7**
Ester value	**216.7**
Solubility in 70 per cent alcohol at 15° C.	**Soluble in 3.3 vols.**

These constants indicate that this sample of the oil distilled from the husks consists largely of linalyl acetate, thus differing from the linaloe oil of commerce which consists principally of free linalol. The predominance of linalyl acetate in the oil is indicated also by the specific gravity being higher and refractive index lower than in the commercial linaloe oil.

According to some observers the wood oil and fruit oil of the linaloe tree are of similar composition and odor, the wood oil being generally strongly levo-rotatory, whereas the oil from the fruits is slightly dextro-rotatory; agreeing in that respect with the wood oil.

Sastry also notes that the higher ester content of Mysore oil, chiefly linalyl acetate is welcomed by the blenders of perfumes.

Fragrant Oils from Beef Brains

In a paper presented to the Division of Biological Chemistry during the 124th meeting of the Amrican Chemical Society in Chicago on September 11, 1953, R. C. Hiltibran, C. L. Wadkins and H. J. Nicholas reported on the isolation of and preliminary observations on a mixture of fragrant oils from beef brains. In their work, 100 were extracted with twice-distilled solvents. By selective extraction and fractional crystallization, phospholipides and most of the cholesterol were removed. A fragrant, low-melting mass obtained from the mother liquors was saponified under nitrogen and a neutral fraction obtained. Chromatography of the latter on alumina with nonpolar solvents yielded five Gm. of a dark yellow hydrocarbon mixture smelling of lemons. More polar solvents eluted cholesterol and 7 Gm. of a deep-red, fragrant oil.

Fractional distillation of the hydrocarbon mixture in vacuo yielded two unsaturated hydrocarbons. The first had a boiling point of 56 to 58° C. at 0.08 mm. and an index of refraction of 1.4876; the second boiled at 58 to 62° C. at 0.05 mm. and had a refractive index of 1.5068. Ultraviolet absorption indicated the presence of two conjugated double bonds in the first, and three in the second compound. Their instability in air has prohibited establishing empirical formulas for them at present. Both have a strong lemon odor. A third hydrocarbon has been obtained from the residue which did not distill. It is a colorless, faintly fragrant, viscous oil for which the provisional formula $C_{22}H_{34}$ is suggested. One double bond is indicated by iodine number and ultraviolet absorption.

Vacuum distillation of the red oil eluted with polar solvents yielded a viscous oil with a fragrant, penetrating odor, boiling point 58 to 60° at 0.04 mm.; and a refractive index of 1.4826. Infrared and C, H analyses indicate the presence of hydroxyl groups. The provisional formula $C_{13}H_{26}O_2$ is suggested, with three conjugated double bonds indicated by ultraviolet absorption and iodine number.

Poejo Oil

According to A. H. de Sonza (*Rev. brasil. farm.* 31:257, through *Chem. Abstr.* 47:7739, 1953) the exotic plant poejo (pennyroyal, *Mentha pelugium*) is cultivated in Brazil on a large scale for its medicinal properties. The physical characteristics of the essential oil show that the Brazilian variety is quite similar to that from other lands, especially North America. The pulegone content, however, is only about nine per cent, compared with 16 to 30 per cent in the U. S. variety and 80 to 90 per cent in the European.

Oil from Eucalyptus Eudesmioides Bark

In the work done by A. Blumann, M. Michael and D. E. White (*J. Chem. Soc.* 1953, p. 788) an essential oil was obtained by the extraction of the finely-ground bark of *Eucalyptus eudesmioides* with light petroleum and ether, followed by steam distillation of this extract. The volatile oil was then fractionated and yielded cineole, d-borneol (isolated as the 3:5-dinitrobenzoate), an uncharacterized hydrocarbon fraction, globulol, and a sesquiterpene alcohol previously obtained from *E. globulus* oil.

Brazilian Onion Seed Oil

E. de Carvalho Rios (*Anais assoc. quim Brasil* 10:271, 1951 through *Chem. Abstr.* 47:5626, 1953) found that onion seeds of two varieties, *Baia bojuda* and *Pera baia*, contained, respectively, 18.58 per cent and 18.15 per cent oil of light yellow color of characteristic odor and faint taste. The oils had the following physical and chemical properties:

	Baia bojuda	Pera baia
Specific gravity	0.9226	0.9235
Index of refraction	1.4773	1.4769
Acidity (as oleic)	1.69 per cent	1.43 per cent
Saponification number	193.7	195.4
Iodine number (Hanus)	117.0	115.5
Reichert-Meissl number	0.72	0.80
Polenske number	0.50	0.59

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SHAMPOO BOUQUET #5323
SHAMPOO BOUQUET #5324
SHAMPOO BOUQUET #5325

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Patent Thoughts and Trends

by *Thomas Cifelli, Jr.**
PATENT ATTORNEY

PROBLEMS, PROBLEMS, PROBLEMS

Most of us like to reduce any matter to its simplest or basic fundamentals. There are so many things to do nowadays that it is quite an art in itself to be able to distill anything right down to its essentials. To try to remember more than these essentials for any substantial period of time will probably make one a candidate for a mental institution.

Perhaps the foregoing thought is the basis for many people feeling that they can keep abreast of the news by just reading the headlines and, perhaps, a paragraph or two of the article. However, those who take their daily news on the run in this manner will have to admit that they do not always get a correct view. This is understandable for while simplification is very desirable, over-simplification has certain disadvantages.

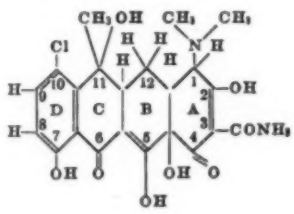
These factors are demonstrated day in and day out in various fields, including the field of science and technology. The guilty ones are especially but by no means only laymen. The so-called conoscenti are also at fault. Take a general example by way of illustration. Someone finds that a certain product gives excellent results in the treatment of a certain malady. Immediately there is a lot of hullabaloo and a lot of people are led to believe that all other products previously used for the treatment in question are obsolete, and, furthermore, the malady has been conquered and will no longer afflict the human race.

It would be just fine if the facts proved to be as spectacular as the promise. However, in practically all cases, it is found that while the "wonder" product is of considerable usefulness, it does have its limitations, and these limitations give rise to further problems which have to be solved.

Recent patents on Aureomycin illustrate the point that the solution to one problem begets others.

Dr. Duggar's invention of Aureomycin, protected by U. S. patent 2,482,055, was doubtless a most meritorious one. The writer is not aware that any unfounded claims for Aureomycin ever were made by Dr. Duggar or his company, American Cyanamid. Indeed, American Cyanamid itself was the first to realize some of the shortcomings of Aureomycin and two recent patents U. S. 2,644,782 and 2,644,783 attest to this fact.

Aureomycin is believed to have the following structural formula:



While Aureomycin may be administered either orally or parenterally, the oral route is not indicated in the case of dying patients or those with gastrointestinal disturbances, as the pH of Aureomycin, as such or in the form of its acid salts, is much too low for parenteral use.

Human blood has a pH of about 7.3 to 7.5 and a preparation as close to this range as possible is preferred. Aureomycin hydrochloride can be titrated to this pH range but the product is unstable and the titration is very critical. The American Cyanamid inventors solved this problem by providing an amino acid buffer system, either in the form of a solution (U. S. 2,644,782) or in the form of a dry mixture (U. S. 2,644,783).

The buffered Aureomycin in solution form is not stable and therefore should be used shortly after it is prepared.

One would think at first glance that the problem of the parenteral application of Aureomycin has been solved. However, one wonders whether this is actually so from the practical point of view. For, whether the physician obtains the buffered Aureomycin in dry or in liquid form it is still apparently necessary for him to prepare the actual solution to be injected at the point of use. In other words, it would appear that while an advance has been made there still is a problem to be solved.

Trade-Marks vs. Trade-Names

It is hard to conceive of a more unpleasant task for a trade-mark attorney than to have to tell a business man that his trade-name cannot be registered under the Federal Lanham Act. This is particularly true where the name is that of a successful business. It is therefore believed that a lot of disappointment would be avoided if a clear distinction were maintained at all times between what constitutes a trade-mark (which is registrable under the Lanham Act) and what constitutes a mere trade-name (which is not registrable under the Lanham Act).

A trade-mark may be said to identify and distinguish a *product*, whereas a trade-name identifies and distinguishes the *business*. In order to be registrable under the Lanham Act, a name must be used in connection with a *product*.

While it is true that a number of trade-names also have been registered, it will be found that where that has happened the trade-name has been used also as the name of the product.

In a report submitted to the Patent Section of the American Bar Association at its annual convention in Boston, Massachusetts, August 23, 1953, Dr. W. J. Derenberg points out that the Patent Office and the courts have continued to make a careful distinction between technical trade-marks on the one hand and trade-names and corporate names on the other. In a 1951 case the Court of Customs and Patent Appeals upheld the Patent Office in denying registration to the words "Lyndale Farm, Floydada, Texas," used on a placard attached to a crate for cattle. The court pointed out that "the use here involved does not so much distinguish appellant's cattle as it identifies

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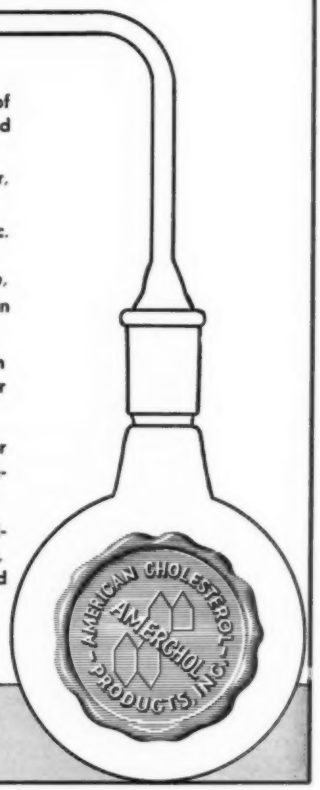

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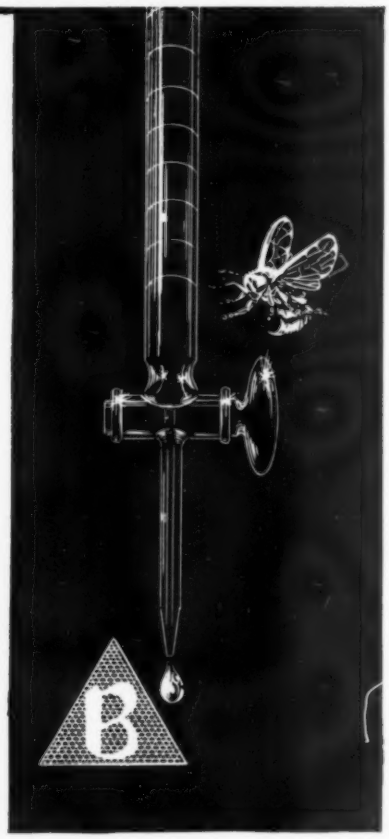

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Essential Oils

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appellant as the source of the shipment while the crate and its contents are in transit." The Federal Court for the District of Columbia more recently held that the notation "Duncan Electric Company" which appeared on a shipping carton and on a name plate to be attached to the goods was not registrable under the Lanham Act of 1946. The Patent Office Examiner-in-Chief reached the same result in a case where it was sought to register the notation "Automatic Scale Company."

The well known "Gilbert Hall of Science," as applied to certain electrical household goods, was also refused registration by the Patent Office. The rejection here was based on the ground that this notation was not used as a trade-mark for specific goods.

Another recent instance of lack of trade-mark use was in the case involving the words "Yankee Network" which was sought to be registered for phonograph records. The specimens filed in the case showed that the words were only used on top of the label as part of the address.

While the use of trade-names is protected by the courts, as far as not permitting another to reap where he has not sown, this does not mean, as we have seen, that the trade-name may itself be registered by the Patent Office.

Hair Tinting

F. M. Lipman addressed himself to the problem of providing hair tinting concentrates which are non-hydroscopic and which may be stored over long periods of time without deterioration of the dye or the containers in which the concentrate is packed. For his efforts he recently won U. S. Patent 2,645,595.

The inventor pointed out that the final result of a hair tinting concentrate which becomes messy because of hydroscopy is that the customer is lost. When one recalls the delectable subjects which apparently utilize the products of Lipman's assignee, the Charles Marchand Company, one must readily admit that the loss of such a customer should not be taken lightly.

The invention protected by Lipman is based on his finding that benzene phosphonic acid ($C_6H_5PO(OH)_2$) when added to the usual hair dyes gives a concentrate which will not absorb water from the air and which will remain effective in storage over long periods of time without any staining.

The following examples, taken from the patent, disclose concentrates which when mixed with one quart of water are said to produce an efficient and practicable tinting composition for home use.

EXAMPLE I

Henna hair rinse

	Grams
D & C Brown No. 1	0.011
Ext. D & C Red No. 13	0.003
Benzene phosphonic acid	0.005
Boric acid	1.500

EXAMPLE II

Auburn hair rinse

	Grams
Ext. D. & C Red No. 13	0.0063
D & C Black No. 1	0.0021
F D & C Yellow No. 1	0.0147
D & C Red No. 33	0.0042
Benzene phosphonic acid	0.1000
Boric acid	1.9000

EXAMPLE III

Platinum hair rinse

	Grams
F D & C Blue No. 1	0.00023
D & C Red No. 33	0.00046
D & C Black No. 1	0.00023
Ext. D & C Violet No. 2	0.00130
Benzene phosphonic acid	1.00000

RECENT PATENTS

2,646,354—**Upjohn—Therapeutic Fat Product.**

2,646,382-3—**Allied Labs.—Anthelmintic Compositions, Contain Halogenated Bis-Phenols.**

2,646,384—**Rystan Company—Therapeutic Water-Soluble Chlorophyll-Containing Feed.**

2,646,385—**M. J. Lewenstein — Pharmaceutical Product for Dysmeuorrhea.**

2,646,427—**Chas. Pfizer & Co.—Streptomycin 2-Hydroxy-4-Amino Benzoate.**

2,646,428—**Lab. Dausse (France)—Rutin Derivatives.**

2,646,434—**Am. Cyanamid—Prepn. of Δ^4-Pregnenes.**

2,646,445—**Merck—Resolution Process and Compounds.**

2,647,073—**Amm-I-Dent, Inc. — Ammoniated Dentifrice Containing Anhydrous Dicalcium Phosphate.**

2,647,074—**Publicker Industries—Riboflavin Microbiological Fermentation Process.**

2,647,123—**Research Corp. — N - (2 - Pyridyl) 2 - Chloro-3-Amino-1,4-Naphthoquinones.**

2,647,130—**Winthrop-Stearns—N - (n - Tetradecyl) N - (3,4 - Methylenedioxybenzyl) N,N - Dimethyl - ammonium Chloride.**

2,647,131—**Spofa (Czechoslovakia) — 3,3′ - bis - 4 - Hydroxycoumarinylacetone Anti-coagulant.**

2,647,134—**Upjohn—Selective Reduction of 3-Keto Group of Polyketosteroids.**

2,647,135—**Upjohn—11 - Alpha - Hydroxy 3, 20 - Diketo-pregnanes.**

2,647,148—**National Drug Co.—3, 4-Dihydroxy-4′ Halogeno Chalones.**

2,647,853—**Le Labs. Francais de Chimiotherapie—Injectable Solution of Salt of P-Aminosalicylic Acid.**

2,647,867—**Dr. A. Wander A. G. (Swiss)—Production of Cholesteryl Esters Brominated in Position 7.**

2,647,893—**Commercial Solvents—Penicillin Salts of Methyl-Pentylamine.**

2,647,894—**Upjohn Co.—2-Chloroprocaine Salt of Penicillin 0.**

2,647,896—**Miles Labs.—Spiro (Cyclohexane-1, 9′-Fluorene) Amines.**

2,647,898—**Upjohn Co.—Isolation of 2, 4 - Di-Aminopteridines.**

2,647,900—**Sterling Drug — 9 - (2,3 - Dihydroxy-propylaminoethylamino)-Acridines.**

2,647,901—**Sterling Drug—1: (Tertiary-Amino-alkylamino) Acridones.**

2,647,902—**Smith, Kline & French Labs.—Prepn. of Tetrahydroisoquinolones.**

(Continued on page 571)

Animal Health

Lice Oil for Pigs

In response to an inquiry for a lice oil suitable for pigs, it is stated in *Chemist and Druggist* (160:72, 1953) a lice oil with a long established use for cattle includes paraffin, and it is probable that a similar preparation would be useful for pigs. The formula is as follows:

Paraffin	**1 part**
Oil of Tar	**1 "**
Sesame oil	**5 parts**

Antibiotic Combinations and Pig Growth

The ability of antibiotic combinations to stimulate the rate of gain in the growing pig has been studied by D. E. Becker, S. A. Terrill, J. W. Lassiter, T. S. Nelson and D. I. Gard (*Antibiotics & Chemotherap.* 3:778, 1953). In their investigations, a corn-soybean oil meal diet, which was adequately supplemented, was employed to ascertain the relative effect of a single antibiotic and of various combinations of antibiotics on the growth response of the pig. Additions of oxytetracycline (Terramycin), procaine penicillin, and bacitracin individually at a level of 15 mg. per pound were tested for a nine-week period. Oxytetracycline and procaine penicillin yielded equal increments in daily gains. Bacitracin was ineffective. However, the same three antibiotics fed in rotation at weekly intervals exhibited only a moderate and statistically insignificant effect on body-weight gains. The greatest increase in daily gains was produced by a mixture of oxytetracycline, procaine penicillin, and bacitracin each at a rate of 5 mg. per pound of diet.

An analysis of three experiments showed that a combination of antibiotics, including oxytetracycline, procaine penicillin, bacitracin, and in some cases streptomycin, exhibited a growth stimulus which was statistically superior to the stimulation of oxytetracycline alone when fed at equivalent levels. An endeavor to determine the specific antibiotic contributing to the enhanced activity of the mixture indicated that at least procaine penicillin and streptomycin may exhibit some additive and/or synergistic activity with oxytetracycline.

Phenothiazine & Salt for Sheep Worms

The results of a long-term field trial of the use of a 1:9 phenothiazine-salt mixture for controlling the large stomach worm, *Haemonchus contortus*, in range sheep has been reported by D. A. Price, W. T. Hardy and I. B. Boughton (*J. Am. Vet. Med. Assoc.* 123:132, 1952). Two flocks of sheep were used in the seven-year study.

One flock had continual access, free choice, to a 1:9 phenothiazine-salt mixture during the entire period; the other flock, in an adjoining pasture, provided for controls and received plain white salt only.

Data obtained from egg counts, estimations of larval development, and actual worm counts at necropsy, all showed that the 1:9 phenothiazine-salt mixture satisfactorily controlled *H. contortus* in range sheep over a period of five to seven years under the climatic conditions obtaining on the Edwards Plateau in Texas.

Arsenicals for Animals

In a report to the 124th meeting of the American Chemical Society, D. V. Frost and H. C. Spruth state that, following extensive use in human medicine, various organic arsenicals were studied for control of livestock diseases. Generally, the compounds tested were ineffective or too costly. The recent finding that certain simple arsonic acids, chiefly arsanilic acid and 3-nitro-4-hydroxyphenyl-arsonic acid, improve appearance and aid animal production has led to their widespread adoption in poultry feeds. Control of both specific and non-specific disease situations by arsonic acids and antibiotics appears to account in large part for their favorable effects in nutrition. Differences in mode of action of the two sets of compounds appear in their differing ability to spare requirement for B-vitamins and to control certain specific diseases. Both favor total feed conversion. The general safety of arsanilic acid in poultry feeds was carefully established. When used for growth stimulation, arsanilic acid has a high safety margin. Higher levels, bordering on toxicity, are required for control of frank disease conditions. Toxicity of arsonic acids both to parasites and to the host may be increased by electronegative substitution. There is a wide species difference in tolerance to different arsonic acids. Certain of the phenylarsenoxides appear to be more active disease-control agents, though less active as growth stimulants, than the corresponding phenylarsonic acids. Arsenicals with antibiotics appear to provide a new economical approach to various disease control problems.

Toxicity of Salt to Chickens

According to R. R. Dykstra (*Vet. Med.* 48:289, 1953) the toxicity of salt added to the diet of young chickens (about one month of age) has been a research project in Great Britain. In concentrations of somewhat over three per cent, continued for three weeks, there were no noticeable undesirable effects, though consumption of water was increased. When the salt concentration was gradually increased up to almost eight per cent, there were fatalities, preceded by drowsiness, gaping, and inability to stand. General edema, cardiac hypertrophy, and congested kidneys, with hypertrophy of the glomeruli, were postmortem lesions observed.

Calcium Pantothenate and Biotin in Poult Starters

During the past few years, say A. R. Robblee and D. R. Clandinin (*Poultry Sci.* 32:579, 1953) an abnormal condition has been noted in groups of poults fed practical type rations. The condition usually became evident between the second and fourth week after hatching and was characterized by dermatitis, broken feathers (giving the poults a rough ragged appearance), perosis, diarrhoea, and increased mortality. Slow growth rate and lack of uniformity in the groups was commonly observed. It was noted that supplementation of

the practical starter ration with calcium pantothenate resulted in some alleviation of the symptoms in early hatched poults but was found to be relatively ineffective in late hatched poults. Additions of both calcium pantothenate and biotin to the practical starter largely prevented the disorder, thus indicating that the deficiency was multiple in nature.

The addition of either calcium pantothenate or buttermilk powder to the practical breeding diet had no effect on egg production or hatchability. The incidence of the disorder and rate of growth of the progeny was not affected by the additions to the breeder diet.

Terramycin for Respiratory Disease in Pullets

In two case studies, reported by E. H. Peterson (*Vet. Med.* 48:311, 1953), which involved more than 11,000 pullets, a product consisting of a terramycin suspension in mineral oil (TMOS) was administered subcutaneously for both prophylaxis and therapy of a disease condition indistinguishable symptomatically from so-called chronic respiratory disease (CRD). The following results were secured: (1) In pullet groups totaling 6,800 birds, where symptoms indistinguishable from CRD were present, evidence of respiratory distress disappeared in from seven to ten days after treatment with TMOS. Respective groups were treated at the following ages: 1,000 at six weeks; 3,306 at 14 weeks; 1,000 at time of housing; and 1,500 a few weeks after the onset of production. Control groups, in those instances where controls were possible, continued to show evidences of the disase after symptoms had cleared in treated birds. (2) In one instance where symptoms of CRD appeared after onset of production (the 1,500 birds referred to 1 above), declining rate of egg lay associated with respiratory symptoms was reversed within seven days after treatment with TMOS. Reversal occurred in each of five bird groups. (3) In case study 2, no bird group treated prophylactically or therapeutically with terramycin prior to onset of production subsequently developed manifestations of CRD. On the other hand, all of five bird groups (2, above) not previously treated with TMOS developed symptoms of CRD shortly after the onset of production. All of these birds originated from a common source. (4) In case study 1, egg production over a period of 22 weeks in a group of 2,000 pullets treated for CRD was significantly greater than in a group of 1,300 corresponding pullets where no treatment was administered for a similar condition of disease.

There had been no occurrences or relapses of a condition suggestive of CRD in any of 13 pullet groups totaling 10,000 birds up to at least six months after either therapeutic or prophylactic treatments with terramycin-mineral oil suspension.

Avianized Distemper Vaccine

Since 1950, a modified live virus vaccine for the prophylaxis of canine distemper has been available for general use. The virulence of the virus has been attenuated by serial chick-embryo passages, but according to published literature the virus has not lost its antigenicity. The report of T. H. Brasmer, R. E. Witter and E. L. Boley (*N. Amer. Vet.* 34:356, 1953) records clinical use of this product and preliminary observation on its immunizing properties under field conditions. In their work, the avianized distemper vaccine was used to vaccinate 102 dogs between the ages of three months and two years. Mild reactions to vaccination occurred in 25 per cent of the animals where information was available. The true incidence of reaction is probably somewhat lower. Moderate reactions were noted in only 3.5 per cent of the reported cases. A single severe reaction and death occurred. It is doubtful if the vaccine should be incriminated in this case. No illness directly attributable to canine distemper occurred in vaccinated dogs during the first winter after vaccination. A single case of chorea was seen several weeks following vaccination. It is not felt that the vaccine was directly responsible. Evidence to date would indicate that avianized distemper vaccine provided both satisfactory immunization and a satisfactory margin of safety.

Control of Fowl Cholera in Ducks

In the studies reported by E. Dougherty (*Cornell Vet.* 43:421, 1953) a comparison was made of the immunogenicity of seven *Pasteurella multocida* bacterins administered to White Pekin ducklings under controlled conditions. Four bacterins were from commercial sources, two were made in the laboratory (formalinized broth-culture-type), and one was egg embyro vaccine. Three-week-old ducklings were given two vaccinations one week apart. In two trials, challenge with a virulent culture was done 10 days after the second vaccination. In a third trial, challenge was done at 2, 4, and 6 weeks following the second vaccination.

The egg embryo vaccine was superior to all the other bacterins in that in all trials it protected the largest percentage of ducklings against challenge with virulent cultures of *P. multocida*. In the third trial, where persistance of immunity induced by embryo vaccine and a broth bacterin was also measured, the embryo vaccine was against the best. Eighty-three per cent of the ducks survived challenge 4 weeks after immunization with the embryo vaccine as against 17 per cent that survived challenge when immunized with the formalinized broth bacterin. A marked loss of immunity was noted by the sixth week after inoculation.

Common Causes of Animal Diseases

According to an item in the *Journal of Commerce* for September 28, 1953, research by University of California scientists has disclosed that many diseases affecting a great variety of domestic and wild animals, and occasionally humans, apparently are caused by the same type of bacteria. D. Rifkind and S. Pickett of the bacteriology department of the university have learned that such maladies as fowl cholera, swine plague, rabbit snuffles, certain respiratory diseases in cattle, sheep, goats and buffaloes and certain rare cases of human meningitis all may stem from a common source.

This is a bacterium which has been carried under the general classification of the "animal" group of Pasteurella. Strains of Pasteurella were collected from animals all over the world. Detailed biologically and chemical studies indicated there were only two types of bacteria in the group. One type was so rare as to suggest that only the other was a major offender.

The practical significance of this is that it may simplify treatment of such diseases among animals. Thus, if penicillin is found to be effective against fowl cholera, there would be good reason to hope it would be equally effective against other diseases. Previously each of the diseases has been treated as if caused by a different organism. The study is considered more significant in relation to veterinary medicine than to human medicine as cases of human meningitis caused by Pasteurella are very rare.

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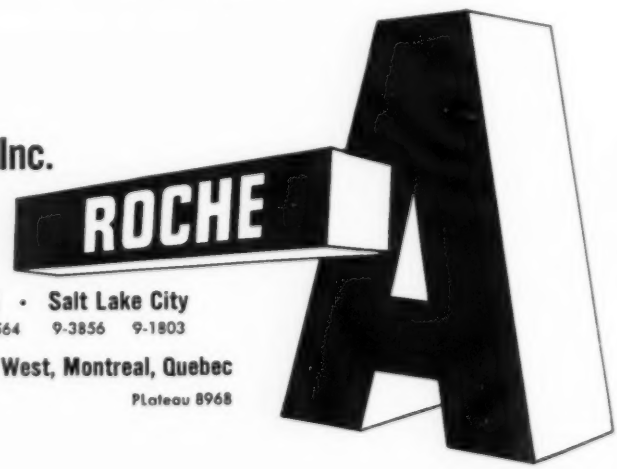


Abreast Of The Markets

Markets Fail to Show Expected Activity as Autumn Begins; Glycerine Down; Vanilla Higher

The markets remained exceedingly steady during the month of September with but few variations showing in the various categories. This is best illustrated by a glance at the respective graphs. The cosmetic raw materials, for example, fell off by the slight amount of 0.9 of a point; the price index of 50 commodities advanced 0.3 of a point; the medicinal chemicals index slipped down 0.2; and the essential oils dropped 0.3 of a point. The botanicals was the most active for the month and advanced from 211.4 to 213.2, a climb of 1.8 points.

Two factors seem to be the cause for this apparent sluggishness which has extended into the first part of October. The first is the unseasonably warm weather which has apparently delayed the purchasing of such cold-weather items as menthol and cocillana bark. The second factor is the Korean truce. Some authorities firmly believe this has had a decided dampening effect on business in these markets. One source in the botanical field reports several attempts on the part of consumers to cancel orders of large shipments—orders that were made a number of months before the truce seemed likely. The feeling, according to this authority, is that the particular buyers feel the market will fall off in the immediate future, and they do not want to be caught with higher-priced material.

The general belief in the trade, however, is that the market will remain stable, there being no need to fear a business slump.

Looking at individual happenings in the industry during the month of September, there were a number of interesting developments which may add a clue to the future course of events. Glycerine showed a decline, both for the natural and the synthetic material, possibly because of private industry's increase in productive capacity. Alcohol continued on a steady level with the consumption and production quite evenly stabilized.

Prices quoted in this section were current on the first of this month.

Vanilla beans continued their upward trend as a result of crop shortages and labor difficulties at the origin. Along the same vein, quite a large number of botanicals have become quite firm for the same reason.

In various essential oils there have been reports of increased costs at the origin which have not yet been reflected in the spot market in this country. Some essential-oil authorities look forward to higher prices in the oils, contending that they have dropped to a low level and will probably begin an upward trend within the next few months.

Drop in Glycerine Prices

There was a general decline in the price of refined glycerine toward the end of September, with the natural product dropping first to 33½c a pound in drums. The synthetic followed suit soon afterwards.

Vanilla Beans Continue Up

Vanilla beans showed an increasing firmness last month. Consumer demand was going along at a rapid pace with no letup in sight, and replacements were few and far between. The new crop is not expected for several months yet so dealers are being forced to rely largely on their own stocks. The Bourbon beans were being quoted between $6 and $6.50 a pound, while the Mexican cuts ranged from $5.75 to $6.25, and Mexican whole beans, also from $6 to $6.50.

Buchu Leaves Lower

New-crop influences had a softening effect on buchu prices last month, the product having dropped to 42 cents a pound.

Ergot Very Firm

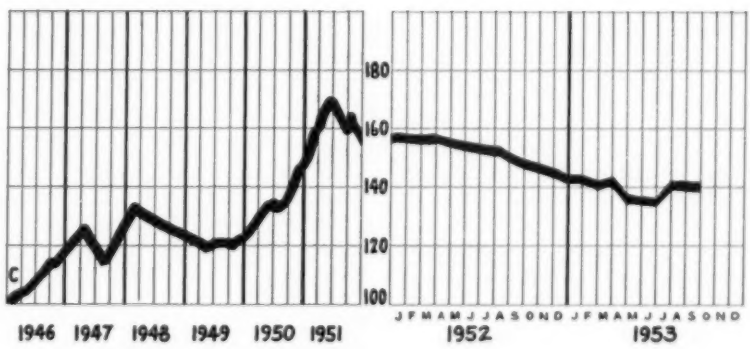
Ergot displayed a great deal of firmness and advanced by as much as 80 cents a pound, the price level now extending between $3.75 and $4 a pound. Shipping prices are said to be above $3. The chief cause of the recent increase in this botanical is that, while there is considerable ergot on the spot market a large amount of the material does not meet N.F. standards, especially that material originating in eastern European countries. In addition, much of the material will not assay for alkaloid.

Ipecac Root Scarce

There is virtually no ipecac root available at the present time in New

(*Continued on page 549*)

25 Cosmetic Raw Materials—Unweighted Price Index. 1926=100.



The cosmetic raw materials index declined slightly from 140.9 to 140.0 Glycerine and menthol were lower, and quince seed was higher.

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Ethyl alcohol demand has been holding up at a steady pace, with no price changes expected through the rest of this year. Available stocks and production were said to be quite sufficient to handle all of the current needs.

The Alcohol and Tobacco Tax division of the Bureau of Internal Revenue, Treasury Department, last month released the following data on the supply, production, withdrawals and stocks of ethyl, completely denatured and specially denatured alcohol during July, 1953, as compared with July, 1952.

Production

	Gallons	
	1953	1952
†Ethyl	39,033,689	39,237,820
*Completely denatured	51,170	12,813
*Specially denatured	19,597,362	19,034,066
Withdrawals		
†Ethyl, tax paid	2,105,510	2,052,130
tax free	42,088,912	37,258,282
*Completely denatured	45,557	12,344
Specially denatured	20,844,867	17,443,035
Stocks		
†Ethyl	75,500,767	77,440,011
*Completely denatured	26,800	40,417
*Specially denatured	5,548,062	9,085,716

* Wine gallons. †Proof gallons.

Menthol a Little Lower

Menthol slipped a trifle lower last month, with the Brazilian quotation of $5.60 a pound as compared to the Japanese material at $7.40. This drop has been attributed to the unseasonably warm weather during September.

There is very little Japanese menthol available on the spot market, and replacements are difficult to obtain, hence the higher figure for this material.

Karaya Gum Unchanged

The spot price of karaya gum remained at 30 cents for the No. 1 grade, N.F. material, although there are reports to the effect that conditions at the origin are becoming exceedingly firm. None of this firmness has been felt in this country, however, and it is not expected that it will be, since demand for the item is quite limited at the present time.

Citral in Good Supply

Citral was being quoted at $3 a pound last month in the face of a normal inquiry. There was no difficulty in meeting the needs of the industry.

Hydroxycitronellal Lower

The price of hydroxycitronellal fell 20 cents during September and is now quoted in the range between $5.20 and $5.40 a pound. As yet, this has had no effect on any other allied items in the market.

Coumarin Still at $2.94

With the price of coumarin remaining at $2.94, manufacturers were continuing to offer the material for non-food uses, according to the general agreement among the producers. No further developments have occurred in respect to this item.

Agar up 25c

Replacement costs for agar agar went up last month and were reflected on the market with a 25-cent increase on spot, the botanical now being quoted at $2.50 a pound.

Anise Seed Star Much Firmer

Anise seed star has become exceedingly scarce, with none available from China, of course, and very little from French Indochina. What there was on the spot market during September and early October could be had for 90 cents a pound.

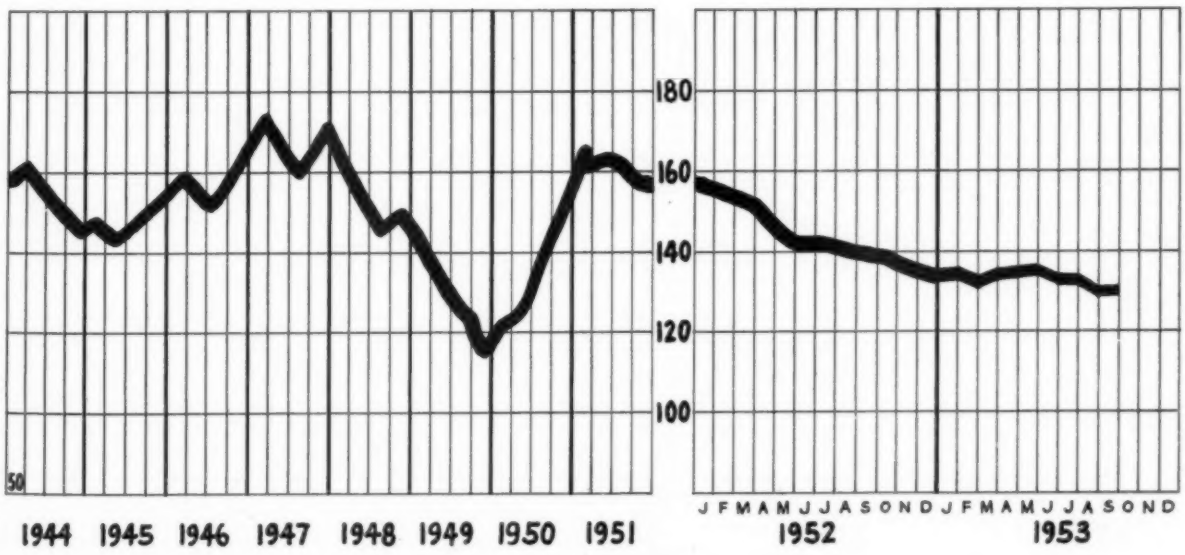
Balsam Tolu Softer

Balsam tolu levied off last month as the supplies became more than enough to handle the light demand. The price of the item fell off to $2.80 a pound. This market is expected to remain on the sluggish side for a while.

Cocillana Bark Firm

Cocillana bark is expected to become much firmer than it already is in the next few weeks, according to spokesmen in the trade, especially since the heavy consuming season is at hand. These consumer needs are expected to

50 Raw Materials—Weighted Price Index. 1926=100.



The price index of fifty commodities for September went up very slightly from 130.1 to 130.4.

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SEPTEMBER PRICE CHANGES

UP

Agar Agar No. 1 25c
Anise Seed Star 15c
Cohosh Root 3c
Coltsfoot Leaves 2½c
Ergot 80c
Ipecac Root 75c
Karaya Gum 11c
Quince Seed 15c
Vanilla Beans, Bourbon $1
Mex. Cuts 65c
Whole 50c
Wahoo Bark of Root 20c
Wahoo Bark of Tree 40c

DOWN

Belladonna Leaves 4c
Buchu Leaves 3c
Cumun Oil 25c
Glycerine 7c
Menthol, Natural 20c
Peppermint Oil, Natural $1.10
Redist. $1

cut deeply into the dwindling stocks of the spot market which are already at a low level. The current price of the bark is in the vicinity of 40 cents, but this is largely nominal.

Cohosh Root Higher

Cohosh root went up 3 cents during the latter part of September and is now priced at 25 cents a pound. There is considerable firmness being felt in this item, and there does not appear to be any chance for improved conditions, at least through the end of the year, according to sources in the trade.

Quince Seed Hard to Find

Some dealers have been unable to complete their orders on quince seed in recent weeks because of the very firm position of this item. There has been a large demand for quince seed lately which has cut into the available supplies. The deteriorating conditions in the Middle East have also added to the difficult market situation. The price now extends between $1.50 and $1.75 a pound.

Sarsparilla Root Limited

The sarsparpilla root picture has become quite firm in recent weeks, with only a few shipments available from Mexico. The spot market has only meagre stocks at the present time and is expected to become even tighter in the weeks ahead.

Ipecac Root Scarce

(*Continued on page 545*)

York, as emphasized by the fact that some dealers are known to have purchased the material from competitors for $6. The spot price of the botanical is quoted at $6.50. The tight situation has been brought about by the heavy buying now taking place in Europe, coupled with the extreme difficulty in obtaining replacements from the origin.

Senega Root Firmness Expected

Now that the collection season for senega root is nearing an end, there are only limited supplies ready for shipment from the Northwest. The firm condition now being felt in this item will probably become more severe in the next few months. Current prices range from $1.90 to $2.10 a pound.

Belladonna Leaves Down

Belladonna leaves were reduced four cents to 34 cents a pound last month as a result of a much lower demand.

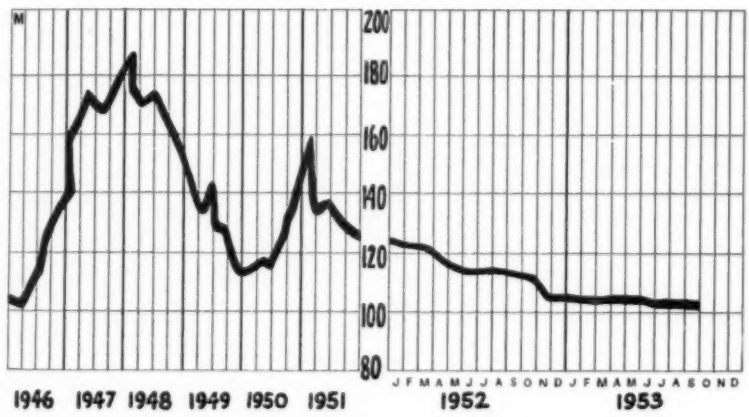
Patchouli Oil Quite Firm

As a result of increased costs at the origin, and therefore higher replacement costs, patchouli oil is expected to advance in price within a short time. The current quotation extends between $7.75 and $9.25 a pound.

Sage Oil Much Firmer

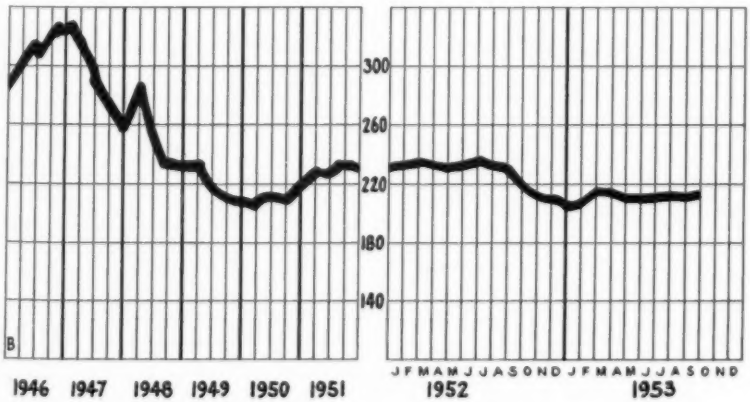
While the price of Dalmatian sage oil has remained close to $8.25 for quite some time, reports have been received to the effect that very little material is coming out of the origin. This factor,

15 Medicinal Chemicals—Weighted Price Index. 1926=100.

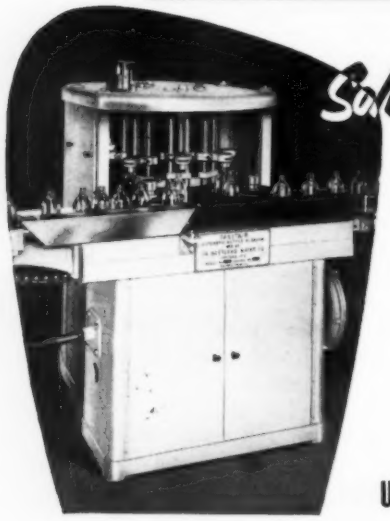


The medicinal chemicals index fell off slightly from 102.7 to 102.5. Menthol was lower.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index went up from 211.4 to 213.2. Bellada and buchu were lower; agar, ergot and ipecac root were higher.



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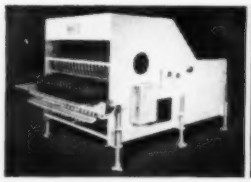

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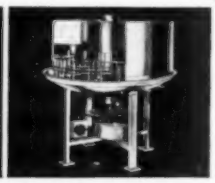

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added to the increased demand now under way, is expected to produce a very firm market. Since the next crop of sage oil will not be available on spot until some time in November, there is every reason to look for a price increase within a very short time.

Spearmint Oil Lower

The price of spearmint oil dropped to $6.55 a pound in some quarters during September, with the upper end of the range extending to $8. This drop has been brought about by the arrival on the spot market of new-crop material. Some members of the trade are of the opinion that the price will level off as soon as the heavy consumers enter the market and begin large purchases.

Anise Oil Remains Firm

Since there still has been no relaxing on the importing of anise oil into the United States from China, the supply situation here is now more critical than ever. The current price of the oil extends from $2.35 to $2.75 a pound, and will probably go higher unless some form of relief arrives.

Peppermint Oil Lower

The price of peppermint oil has fallen off to $4.50 a pound for the natural oil and to $4.90 for the redistilled material. This reduction, which has been brought about by the recent entry into the market of the new crop material, is expected to remain for some time, since there is now ample material on hand and a complete lack of any firmness. Spokesmen do expect a firming tendency toward the end of the year, however, when much of the current supply has been used up.

Dillweed Oil Lower

The price of dillweed oil was quoted 15 cents lower in some quarters at $3.40 a pound. Spokesmen stated that they did not believe there would be any further declines in the near future.

Geranium Oil Constant

African and Bourbon geranium oil both remained unchanged at $10 and $9.75, respectively, with some sources suggesting their might be an increase noted within a short time. The present price level is the lowest this oil has been in quite some time.

Bergamot Oil Unsteady

A reduction in bergamot oil was said to have taken place in some quarters, with one dealer reporting the oil at $10.50 a pound. In general, however, the range of the oil still remained between $11.25 and $14 by the end of September. Whether or not this lower price will become effective throughout the trade has still to be determined.

Orange Oil Favorable

Orange oil appeared to be in a very favorable position last month, with more than enough material to satisfy all needs, in addition to those of the export market. There were no major price changes, although some quarters reported a slightly shaded California quotation.

Lime Oil Easier

In some cases, lime oil was lower during September, while in other quarters the $6.35 figure for the distilled material remained as is. Demand for the oil has tapered off considerably now that the warm summer months have passed.

Citronella Oil Steady

Citronella oil held steady last month, the price level having been maintained at 48 cents a pound for the Ceylon variety, and 65 cents for the Java oil. Spokesmen indicated that there was ample oil to satisfy all needs at the present time and that as a result no firmness will develop in the foreseeable future.

Lemon Oil Remains Firm

Because demand for lemon oil outstripped the production last month, continuing the trend that has been in effect for quite some time, this particular oil showed increasing firmness on the spot market. In many cases the dealers were selling only to regular customers, and even then were being careful to apportion the supply evenly.

The Italian lemon oil, ranging from $6.50 to $9.75, was extremely scarce and could not be relied on to relieve the spot market in any way.

Coriander Oil Tighter

Although coriander oil remained at $18.50 a pound last month, spokesmen believe the spot market quotation will advance shortly as a result of the increased replacement costs at the origin.

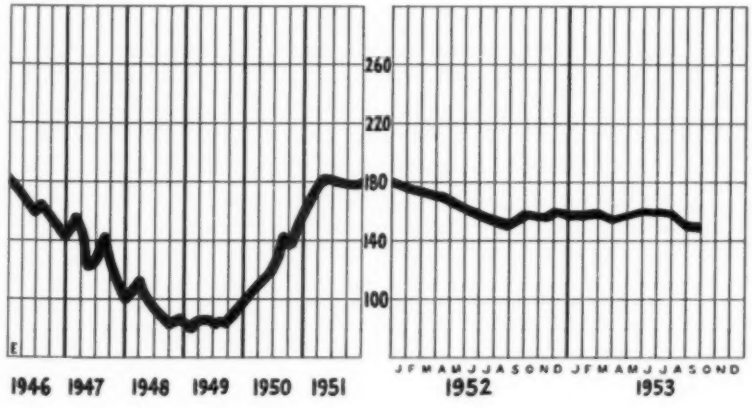
Clove Oil More Favorable

In some quarters the price of clove bud oil has been reported as low as $7; however, the general price level seems to be nearer $9.25 a pound. Since the price of the clove buds themselves has been coming down in recent months, it appears as if the oil will soon be at a comparably lower level throughout the trade.

Grapefruit Oil Limited

Supplies of grapefruit oil are very much on the limited side at the present time. While the demand is not as great as for other citrus oils, it is nevertheless steady, according to spokesmen.

15 Essential Oils—Weighted Price Index. 1926=100



The essential oils index fell slightly from 149.3 to 149.0. Peppermint oil was lower.

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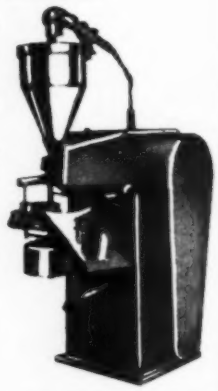
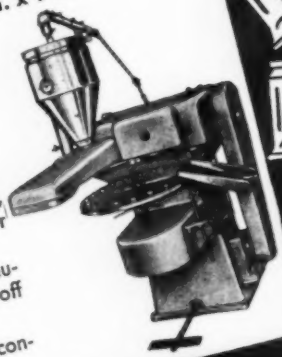
MODEL 415
Capacity: 25 Tubes per minute.
Tube Size: Up to 1 1/4 in. x 8 in.
- Easy two-minute size changeover
- Two or three folds.
- No tube—no filling, automatic ejector device.
- Pneumatic string cutting off device.
- All stainless steel contact parts.



MODEL 248
Capacity: 55 tubes per minute
Tube size: Up to 1 1/2 in. x 9 in.
- Easy three-minute size changeover.
- Two, three or quadruple folds.
- Cap tightener.
- No tube—no filling, automatic ejector device.
- Tube cleaning and pneumatic string cutting off device.
- All stainless steel contact parts.



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Management Forum

(*Continued from page 523*)

Dry Feeders

Since the COM-BIN FEEDER was placed on the market a little over a year ago it has definitely demonstrated its ability to satisfactorily handle a wide range of difficult-to-feed materials. Such materials as filter cake, centrifuge cake or any products containing moisture or oil making them sticky and non-flowable can readily be handled in the COM-BIN. Also dry solids which have strong tendencies to bridge and arch in the conventional surge bin or storage hopper are easily handled in the COM-BIN.

The operating principle of the COM-BIN FEEDER consists of slicing off or plowing out the lower layer of material contained in the cylinder and resting on a circular discharge plate. Because the cylinder and material contained within the cylinder are revolving and because the plow is stationary and set at an angle, the material is forced out from the cylinder and over the discharge plate along the leading edge of the plow.

As a service to those firms which for one reason or another desire to run COM-BIN pilot tests in their own plants to simulate plant scale operation, Pulva Corporation maintains several pilot feeders which may be rented at a nominal charge.

These pilot size rental units are furnished with a full complement of attachments to permit handling all types and kinds of materials. All parts coming in contact with the material being handled are No. 304 stainless steel. Bin capacity is 2-1/3 cu. ft., the bin being 17″ dia. by 18″ high. Speed of the feeder may be varied from 0.6 RPM to 14.6 RPM. A ½ H.P. totally enclosed motor may be plugged into any standard lighting circuit having 110 volt, 60 cycle alternating current.

The rental COM-BIN FEEDERS are shipped in special packing cases, one side of which is hinged at the bottom. The feeder, being mounted on casters, may be rolled out of the box and replaced in the same manner, eliminating any necessity for crating on the part of the user.

Pulva Corporation still maintains its policy of free testing service on test units which are always available in their testing laboratory.

Complete information on the new rental COM-BIN FEEDERS together with rental contract forms will be sent by the manufacturer, Pulva Corporation, 572 High Street, Perth Amboy, N. J.

Proportioning System

A new six-page bulletin, offered by Richardson Scale Co., Clifton, N. J. pictures and describes the company's recently developed proportioning and materials handling system for automatically making up formulated mixes of bulk products.

Called Select-O-Weigh, the system uses a single automatic scale to cumulatively weigh different products. The amount of each product fed to the scale is preset by

an operator at a remote control panel. Materials handled include feeds, foods, chemicals, powders, fertilizers, oils, pelletized rubber, rock products—any formulated product.

The bulletin explains the operation of the electronic control system, discusses rates, accuracies and goes into the possibilities of remote recording.

Also explained is the actual formulating operation, the selecting, feeding, weighing and mixing. The bulletin includes a large schematic drawing of a typical Select-O-Weigh system, showing the arrangement of bins, feeders, bulk scale and batch mixers. Photos show a Select-O-Weigh control panel and an automatic scale set up for use with the system. Also pictured and described are five models of Richardson scales used for the proportioning operation.

For copies of bulletin (#0351), write to Richardson Scale Co., Van Houten Ave., Clifton, N. J.

Packaged Automatic Boilers

Bulletin 1219, just off the press, describes POWERMASTER packaged automatic boilers in seventeen sizes from 15 through 500 hp for steam process as well as steam and hot water heating service. The first portion of the bulletin describes the advantages of packaged automatic boilers contrasted with equipment of conventional design. Outstanding constructional and operational advantages of POWERMASTER—3-pass design, forced draft, controls—are described and pictured. The firing equipment for light and heavy oils as well as gas is described in the Orr & Sembower VORIFLOW air-atomizing oil burner design and premix gas burner designs. Detailed specifications describe the boiler, burner, and control systems. A 350-hp has been added to the line. Typical installation photographs are reproduced emphasizing fuel savings, automatic operation, various firing arrangements, and simplified maintenance. Drawings, cutaway views, and useful boiler data all make this new publication a valuable reference on packaged automatic boilers for the consultant as well as the management and the operators of boiler plants for process or for comfort heating at pressures up to 250 psi. Write Orr & Sembower, Inc., Morgantown Road, Reading, Pa., for a copy of Bulletin 1219.

Filling Machine

A new, improved filling machine is now available for filling bottles that have been previously labeled and packed in cases. Operating with the head of the filler lowered into the case, the filler fills the bottles by vacuum and is designed to return surplus liquid to an overflow container. Motor automatically stops when bottles are filled. Ideal for all types of free-flowing liquids, this filler eliminates handling of heavy, filled bottles. Easily cleaned. Available with or without supply tank. Manufactured by Eyrle Company, 1539 Folsom, San Francisco 3, California.

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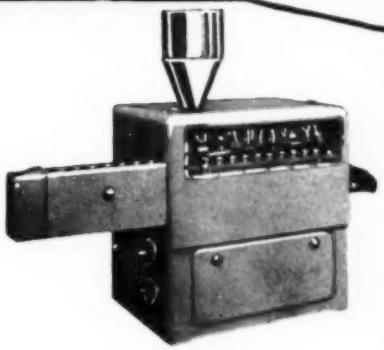

MODEL 700

Capacity: 85 tubes per minute.
Tube size: Up to 1 3/4 in. x 9 in.

- Easy three-minute size changeover.
- Two, three or quadruple folds.
- Cap tightener.
- No tube—no filling, automatic ejector device.
- Tube cleaning and pneumatic string cutting off device.
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- Conveyor belt.
- All stainless steel contact parts.

Our standard models include all the mentioned features ordinarily put into the category of "additional features at extra cost."

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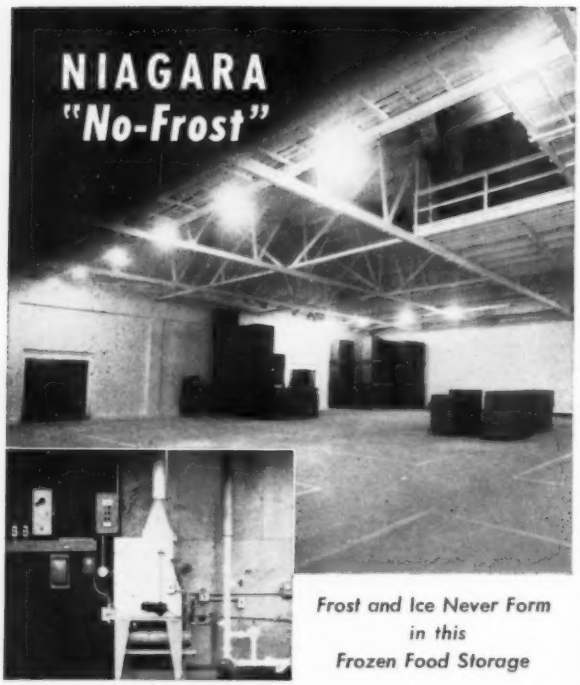

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OVER 15 YEARS OF SUCCESSFUL EXPERIENCE PROVES THE VALUE OF NIAGARA NO-FROST

Role of Anti-Enzymes

(Continued from page 465)

alcohol and acetone. Certain amines, like urea, thiourea and guanidine are effective denaturants. This is also true of most synthetic detergents which readily inactivate enzymes. Typical narcotics, such as urethanes and barbiturates, are powerful enzyme inhibitors; this property being apparently related to their ability to denature proteins.

It is evident that there are numerous anti-enzymes and that they can inhibit or modify the action of many enzymes. This is emphasized in Sizer's observation that a systematic study of inhibition has led to the hypothesis that the action of such potent agents as drugs, hormones, toxins and antibiotics might be explained in part by their ability to interfere with certain enzyme systems. Various mechanisms are used when these compounds act as enzyme inhibitors. Many are antivitamins or antimetabolites, others act as reagents for proteins, while some work as protein denaturing agents.

The practical application of enzyme inhibition is attracting the attention of many investigators in both science and industry. Their work has already led to a number of valuable uses for the anti-enzymes. One outstanding example that comes to mind is the well established use of ascorbic acid to prevent the enzyme-induced browning of sliced or peeled fruits. In a comparative study of various agents for this purpose, Tarr and Cooke[10] found that dihydromaleic acid and *l*-ascorbic acid were most effective for retarding enzymic browning of defrosted peaches, apples, pears and apricots.

Another, newer application of specific anti-enzyme action may lead to the development of a practical oral contraceptive. This prospect, which is attracting considerable attention, is based on the inhibitory action of phosphorylated hesperidin on hyaluronidase. In explaining the mechanism involved, Martin and Beiler[11] pointed to the observation that the sperm cannot penetrate the ovum unless the outer hyaluronic acid gel layer is dispersed. Other investigators had found that testicular hyaluronidase caused denuding of the ova and thus permitted sperm penetration. It was reasoned that, since this mechanism is dependent upon the activity of hyaluronidase, a highly effective inhibitor of the enzyme should block fertility.

Since previous studies[12] had shown that phosphorylated hesperidin is a powerful inhibitor of hyaluronidase and is non-toxic, Martin and Beiler undertook to determine the capacity of this compound as a hyaluronidase inhibitor to produce sterility. In their experiments on rats, phosphorylated hesperidin was found to be an effective antifertility agent when given either orally or intraperitoreally.

Subsequently, from the results of experiments on mice, Sieve[13] also concluded that there is definite impairment of fertility in the test animals under treatment

with phosphorylated hesperidin. Particularly important, however, is his preliminary report on the efficacy of this anti-enzyme as an oral contraceptive for humans. From his detailed study of 300 married couples he was able to state that the anti-fertility action of the drug was complete except for two cases. Even these "failures" were not significant because of lack of cooperation of the two couples. This oral medication does not cause permanent inhibition of fertility; omission of the drug for a 48-hour period resulting in restoration of fertility.

It should be noted, however, that other investigators[14,15] have not been able to confirm the anti-fertility effects of phosphorylated hesperidin on animals. In considering their data, Millman and Rosen[15] remarked that their results are obviously at variance with those reported for the human being. It is noted that the reasons for this are not immediately evident, although one must consider the possibility that there is a wide species difference between rodent and man in the anti-fertility effects of phosphorylated hesperidin.

Another application for this anti-enzyme is in the enhancement of adrenocorticotropic activity. Cohen and his colleagues[16] have found that the subcutaneous administration of purified corticotropin (ACTH) in gelatin, in phosphorylated hesperidin, and in both together (the combination being the most effective) enhanced the effect of the hormone on the adrenal cortex as measured by adrenal ascorbic acid. The mechanism of action is attributed to the anti-hyaluronidase and anti-proteolytic properties of the phosphorylated hesperidin.

Another example of anti-enzyme action, one not so well publicized outside of medical circles, is the use of synthetic detergents to combat lysozyme. There is growing evidence that this mucolytic enzyme may be an etiologic factor in ulcerative diseases, such as peptic ulcer and chronic ulcerative colitis. Although the significance of lysozyme is still controversial,[17] it has been shown that alkyl sulfates are capable of inhibiting this enzyme and of producing improvement in some cases.[18] Portis,[19] who prescribes sodium, alkyl or lauryl sulfate in the treatment of ulcerative colitis, cites the view that these agents bind lysozyme and make it inactive. A preparation (Kolantyl) containing sodium lauryl sulfate as one of its active ingredients has been the subject of several studies[20,21] and is now available for the therapy of peptic ulcer.

More recently similar substances have attracted much attention as agents for inhibiting the enzymes associated with dental caries formation.[22] It is generally accepted by most authorities that caries is caused by acid formed as a result of bacterial action on carbohydrates. The process is characterized by a decalcification of the inorganic portion of the tooth and is associated with or followed by a disintegration of the organic matrix.

Several years[23] ago it was suggested that the chemical process which occurs during caries formation could be

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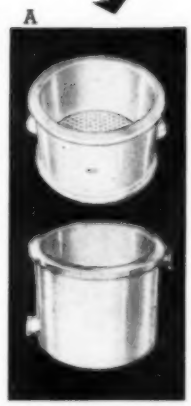
U.S. White CHEMICAL PORCELAIN VACUUM FILTERS



Fast, pure filtrations along with *quick, change over set-ups* are yours when you use "U. S." Chemical Porcelain Vacuum Filters!

Check the 10 big advantages you get with "U. S." Porcelain Filters:

- Maximum corrosion resistance
- High mechanical strength
- Zero porosity — no contamination from previously filtered materials
- Dense, iron-free composition — no contamination from filter body
- No-seam, no-joint construction
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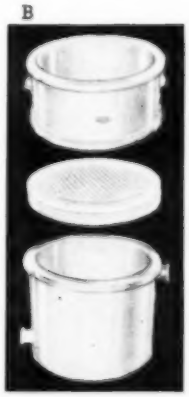
- Attractive gleaming white appearance



Illustrated at right are the three popular styles of White Chemical Porcelain Vacuum Filters.

(A) Two-piece construction: The perforated support plate is integral with the upper chamber of the filter.

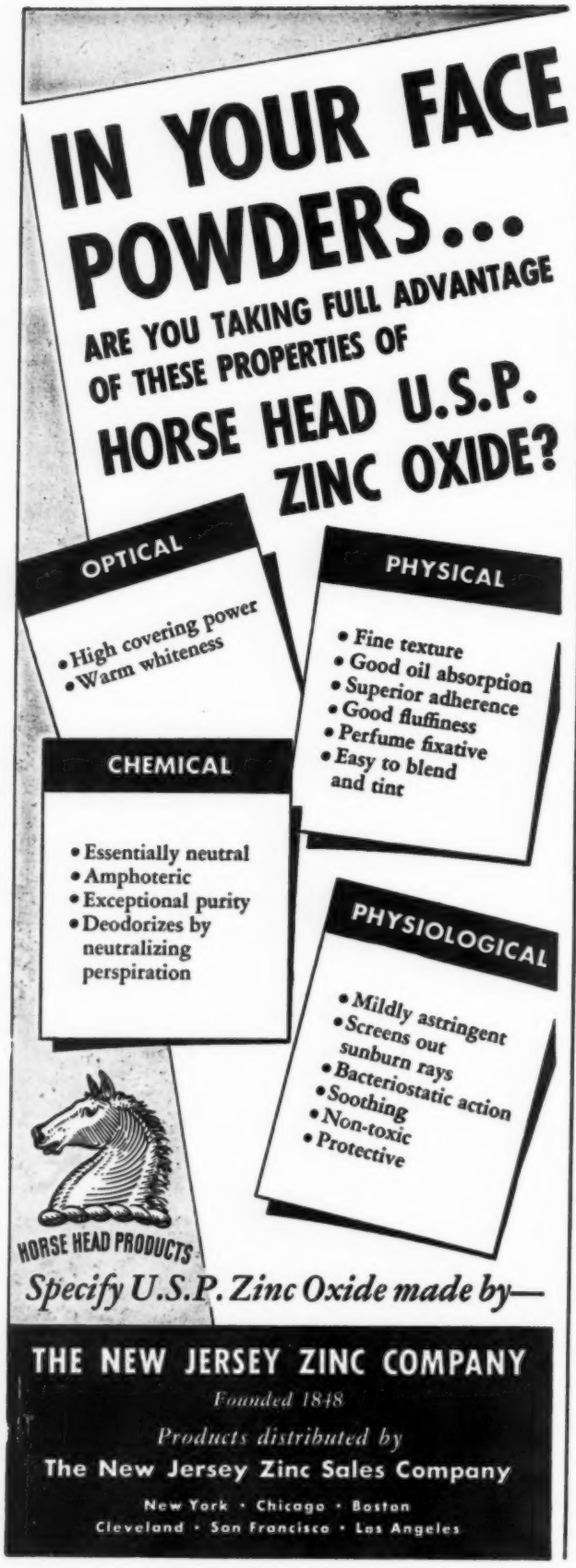
(B) Three-piece construction: The loose perforated support plate (or Filterstone Porous Plate) fits in between the upper and lower chambers of the filter.

(C) Three-piece construction: Here the loose perforated support plate (or Filterstone Porous Plate) fits inside the upper chamber of the filter.

All "U. S." filters are guaranteed to withstand a complete vacuum. "U. S." white chemical porcelain vacuum filters are made in a variety of types and sizes.

WRITE FOR BULLETIN F-27

U. S. STONEWARE
240-D Akron 9, Ohio



prevented by the use of enzyme inhibitors. Thus, even though it might be impossible to eliminate bacteria from the mouth and thus prevent acid formation, it is theoretically possible to accomplish the same end by inactivating certain bacterial enzymes and in this way prevent acid formation without changing the number of bacteria in the mouth.[24]

As was pointed out in a previous review,[25] vitamin K, ammonia and urea have been found capable of reducing acid formation, but they have only short-lived action. Penicillin provides much more lasting effects, but there is danger of producing penicillin sensitivity in persons using the dentifrices and causing penicillin-fastness in the bacteria exposed to the antibiotic.

Recognizing the shortcomings of these and other acid-inhibiting agents Fosdick, Calandra, Blackwell and Burrill[26] recalled the suggestion that if the dental or mucinous plaque (commonly associated with carious lesions) could not be eliminated or so modified as to be harmless, it might serve as a means for retaining enzyme inhibitors on the tooth surface. It was felt that if compounds could attach themselves to the plaque and at the same time be powerful enzyme inhibitors either *in situ* or by being gradually released from the plaque, these substances could be incorporated into an effective therapeutic dentifrice or mouthwash.

When it became apparent that compounds could be found that would become attached to dental plaques and remain after washing with water, Fosdick and his colleagues set up standards for suitable anti-enzymes. Primarily, the compound must be effective in preventing acid formation from sugar, and it must attach itself to the plaque and should remain active for several hours. It must, of course, be harmless to the individual. It should be colorless, it should not be unpleasant to the taste and it should be readily available. Furthermore, it should be compatible with the type of preparation in which it is used and it must be stable over relatively long periods of time.

With this concept in mind, screening tests were developed to determine the inhibition of acid formation and absorption onto the plaque surface. After tests on 381 compounds, ten were found that will become attached to the plaque material in effective concentrations and resist washing with water. Of these, only two are known to fulfill all of the basic requirements. These substances, sodium N-lauroyl sarcosinate and sodium dehydroacetate, were therefore selected for *in vivo* testing in dentifrices or mouth washes.

Sodium N-lauroyl sarcosinate was tested on 144 individuals and sodium dehydroacetate was tried on 145 individuals. The results have been favorable. After nine months of testing, it was found that both compounds were still effective in blocking acid formation below what the investigators considered the harmful level. This dividing line, they note, is empirical and is based primarily on laboratory evidence. Thus, a plaque pH of 6.5 to 6.0 is considered a safe area, pH 6.0 to 5.5 is a questionable area, while below pH 5.5 is the danger area.

At the end of a nine-month test period it was found that 44 per cent, 95 per cent, and 89 per cent of the cases remained above pH 5.5 during the 20-minute interval following a sugar rinse after the use of a placebo, sodium lauroyl sarcosinate and sodium dehydroacetate, respectively. It appears, therefore, that these substances materially decreased the rate of acid formation on the tooth surface over long periods of time. Continued daily use of these compounds indicates that their efficiency is maintained.

Products containing these two anti-enzymes and probably other enzyme inhibitors are now on the market. Indications of how such materials are incorporated in dentifrices, mouthwashes and other products are given in South African patents 16,272 and 17,041. These have been considered in detail in the September, 1953 issue of DRUG AND COSMETIC INDUSTRY. Mention should be made, in connection with such products, of the report[27] that the Food and Drug Administration is ready to go to court to enforce its requirement that each of the therapeutic tooth pastes containing one of the new anti-enzymes must carry an effective new drug application.

In their report, which was published in August, 1953, Fosdick and his associates[26] stated that extensive clinical studies on the effects of these therapeutic products on carious lesions had been started. It was intended that these investigations would continue for a period of two years, after which the clinical efficacy could be evaluated. It was also pointed out in this report that, as yet, no accurate estimates concerning the effect of these compounds on clinical caries can be made.

Stories in the popular press[28,29,30] have told that large scale studies to determine the value of the anti-enzyme dentifrices are being carried out at Northwestern University, where the original work was done. Additional investigations are being carried on at other universities, including Drake, Florida and Miami. Employees of several large industrial plants are also taking part in these tests. This means that eventually considerable data will be made available.

As of this writing, however, it appears that none of these clinical data on the actual effect of anti-enzyme dentifrices on the caries rate have been published in authoritative scientific journals. Because of this lack of clinical evidence, leading dental groups are critical of certain implied claims for these new preparations. For example, in a joint statement[31] of the Council on Dental Research and the Council on Dental Therapeutics it was pointed out that "Antidecay claims are not justified for products until their effect in actually reducing human dental caries has been directly demonstrated by acceptable controlled studies of human population groups." It is noted that the Councils have not been able to obtain any evidence that data are available to substantiate antidecay claims.

Similarly, in an editorial[32] in its *Journal*, the American Dental Association has expressed the view that, "The ultimate value of any agent for the prevention

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(B) Dr. Kinsey had a better quiz program than Groucho Marx.

•

There are many solid citizens who feel that Kinsey discovered nothing new about Sex. Some of the protests make one feel they resent the fact that he treats the subject statistically instead of sadistically.

•

It's unfortunate that what was offered as a dispassionate scientific study should be accepted in so many quarters on an emotional basis. In other words, the good doctor was expected to play a neutral role in science: A kind of intellectual Christine Jorgenson.

•

Although the new Kinsey effort is published on a non-commercial basis, it will probably earn more money for publishers than anything since "Gone With the Wind." This will come from lesser known authors who are preparing books explaining Kinsey, supporting Kinsey, refuting Kinsey and thanking their lucky stars there is such a guy.

•

Most absurd comment on the new Kinsey Report came from a nationally syndicated columnist who made the point that the animals on his farm got along well without the book. On the same premise, one must presume, there is small market for turtle neck sweaters among ostriches.

•

Most heartening reaction came from the mother of a college youth. "Thank Heavens," she is reported to have said, "when my son talks about Kinsey I don't have to worry he's taken to excessive drinking."

•

But the most substantial observation on the new Kinsey Report came from a Cosmetic manufacturer who said: "Who does what and how ain't so important as whose mascara and lipstick is featured in the advertising."

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of tooth decay must be determined by direct observation of the actual reduction of tooth decay in humans under carefully controlled and scientifically acceptable conditions.

"While the idea contained in this report that anti-enzyme substances can be added to prevent the formation of decay-causing acids in the mouth is not new, it continues to be an interesting suggestion. The value of anti-enzymes in preventing tooth decay among humans still remains to be demonstrated. All available data to date are based on laboratory findings."

In a release dated September 17, 1953, the International Association, for Dental Research (publishers of the *Journal* in which the report by Fosdick and his colleagues appeared) took sharp issue with claims for the new anti-enzyme tooth pastes. A statement signed by officers of the Association pointed out that neither they nor their publication has endorsed any dentifrice as having special decay-preventive properties. "It is the hope of the officers of the Association," the statement said in part, "that a truly therapeutic dentifrice will become available, but as yet they have seen no public evidence that warrants claims of great reductions in occurrence of dental caries through routine use of any dentifrice."

It is evident that much research is going on in many places to learn the value of the anti-enzymes in medicine, dentistry and other fields. Current work strongly indicates that enzyme inhibitors can become important factors in modern therapy. Indeed, some believe that these substances may have a place in the treatment of cancer. This possibility is suggested, for example, by Akermann and Potter[33] in discussing their findings on enzyme inhibition in relation to the possible chemotherapy of cancer.

The task facing enzymologists and the great rewards they may hope to reap have been well indicated by Sizer[8] who said that, "Since there is no general mechanism by which drugs, hormones, toxins, and antibiotics affect enzyme systems, each biologically active compound must be investigated with reference to its action on a variety of enzymes both in vivo and in vitro. Although this is an arduous and monumental task, it has already begun to pay rich dividends. These studies not only afford an understanding and interpretation of enzyme inhibition but also provide a hypothesis to explain in part the exceedingly high biological activity of such compounds. A rationale is at last being provided which should enable the chemist to synthesize new biologically active compounds designed for high pharmacological activity or fashioned as lethal agents against microorganisms, higher plants and animals, or even cancerous tissues of man."

BIBLIOGRAPHY

1. Edsall, J. T.: "Enzymes and Enzymes Systems, Their State in Nature," Cambridge, Harvard University Press, 1951, p. VIII.
2. Tauber, H.: "Chemistry and Technology of Enzymes," New York, John Wiley & Sons, 1949, pp. 1, 14-16.
3. Rapp, G. W.: Oral Surg., Oral Med. & Oral Path. 1:319, 1948.
4. Anon.: Sugar Molecule 1:11, Oct. 1948.
5. Reed, G.: Chem. Ind. 66:30, Jan. 1950.
6. Lesser, M. A.: Drug & Cosmetic Ind. 71:178, 1952.
7. Lesser, M. A.: Drug & Cosmetic Ind. 70:186, 1952.

8. Sizer, I. W.: Amer. Brewer 85:29, May, 1952.
9. Sumner, J. B. & Myrback, K.: "The Enzymes: Chemistry and Mechanism of Action," New York, Academic Press, 1951, Chapt. 7 (by L. Massert).
10. Tarr, H. L. A. & Cooke, N. E.: Food Technol. 4:245, 1950.
11. Martin, G. J. & Beiler, J. M.: Science 115:402, 1952.
12. Bieler, J. M. & Martin, G. J.: J. Biol. Chem. 174:31, 1948.
13. Sieve, B. F.: Science 116:373, 1952.
14. Chang, M. C. & Pincus, G.: Science 117:274, 1953.
15. Millman, N. & Rosen, F.: Science 118:212, 1953.
16. Cohen, H., Freedman, H. H., Kleinberg, W., Eisler, M. & Martin, G. J.: Proc. Soc. Exper. Biol. & Med. 82:749, 1953.
17. Editorial: Ann. Int. Med. 37:813, 1952.
18. Prudden, J. F.: Gastroenterol. 15:426, 1950.
19. Portis, S. A.: Canad. M. A. J. 63:237, 1950.
20. Hufford, A. R.: Rev. Gastroenterol. 18:588, 1951.
21. Miller, B. N.: J. So. Carolina M. A. 48:1, Jan. 1952.
22. Self, S. B.: Wall St. J., Aug. 13, 1953, p. 1.
23. Burrill, D. Y. et al: J. Deut. Res. 24:273, 1945.
24. James, K. M.: Canad. Pharm. J. 83:890, 1950.
25. Lesser, M. A.: Drug & Cosmetic Ind. 68:179, 1951.
26. Fosdick, L. S., Calandra, J. C., Blackwell, R. Q. & Burrill, J. H.: J. Deut. Res. 32:486, 1953.
27. Anon.: Drug Trade News 28:1, Sept. 14, 1953.
28. Engle, W.: American Weekly, Aug. 23, 1953, p. 2.
29. Bailey, H.: Better Homes & Gardens 31:22, Sept. 1953.
30. Nicholson, A.: Saturday Evening Post 226:30, Aug. 22, 1953.
31. Joint Statement: J. Am. Deut. Assoc. 47:349, 1953.
32. Editorial: J. Am. Deut. Assoc. 47:354, 1953.
33. Ackermann W. W. & Potter, V. R.: Proc. Soc. Exper. Biol. Med. 72:1, 1949.

Facts on Toiletry Demand

(Continued from page 471)

It is indicated that the most irritating factor, when shopping for toiletry items, is the unavailability of desired items (reported by 33 per cent of the respondents), followed by "Packages not explaining proper use (12 per cent), and "insufficient number of sizes" (nine per cent).

Marketing Antibiotics

(Continued from page 463)

uses for penicillin can be developed.

I shall have something further to say about the possible importance of such uses; but in the pharmaceutical market at least, it seems clear that the further development of specialties will provide the best and probably the only means by which margins at all like those which are traditional in the pharmaceutical industry can be obtained for penicillin products.

Wide Range Antibiotics

There are fewer products (and companies) competing in this than in the penicillin market, and they can be completely enumerated quickly. In alphabetical order, they are Aureomycin, a Lederle product; Chloromycetin, a Parke, Davis product; Erythromycin—which is marked by Abbott as Erythrocin, by Lilly as Ilotycin, and by Upjohn under its generic name; and Terramycin, the Pfizer product. The overall sales volume of all of these products, both domestic and foreign, has levelled off at about $140 million per year; and it will now presumably expand on the pattern of the growth in penicillin volume in recent years which I have already described. The sales volume enjoyed by these products has, as an aggregate, exhibited remarkable stability during the last two years. During the period November, 1951 through April, 1952, the *domestic* sales of the wide range antibiotics—at that time there were only three, Aureomycin, Chloromycetin and Terramycin—in all channels of distribution totalled

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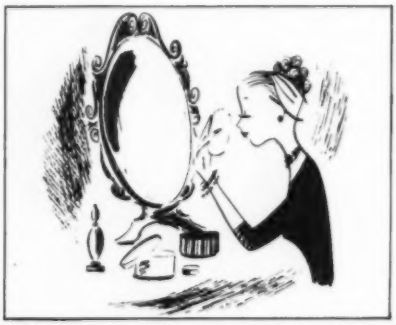

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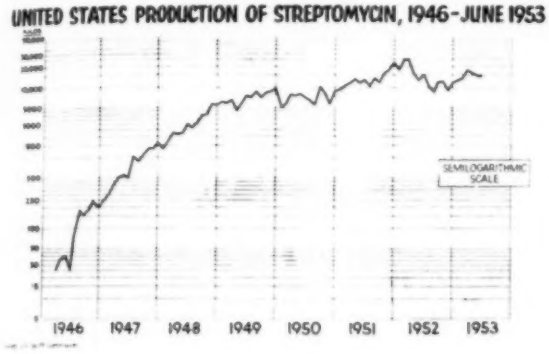
about $42.2 million. A year later during the period November, 1952, through April, 1953, they totalled $42.9 million. (These raw data understate the rate at which use of these products had grown during this period slightly because they have not been adjusted for a changing pattern of seasonality in their sales but they are probably accurate enough for our purposes.)

But this period witnessed large shifts in the share of this total accounted for by individual products. In an unfortunate series of events which are familiar to all of you, the sales of Chloromycetin were last year reduced to a fraction of what they had been. Since then erythromycin has been introduced into this market. Thus, the present competitive alignment in it is radically different from that of only a little more than a year ago. Aureomycin and Terramycin now dominate it, while the several erythromycin products and Chloromycetin occupy important but second-order positions.

This outline of the present competitive situation does not, however, tell the whole story. Unlike the standard penicillin products which, whoever their manufacturer, are usually interchangeable with each other, the wide range antibiotics each have distinctive attributes. The scientific importance of these differences among them tends to be magnified somewhat by the competitive promotional efforts of the companies which produce them, of course; but it is still true that these differences are sometimes of great practical importance. And this importance is reflected in the fact that there has been much less price competition in this market than in the penicillin market. Broadly speaking, you establish a position in this market by convincing doctors of your product's distinctive merits and not, usually, by offering it at a lower price. Any change in this competitive climate will almost certainly be preceded by one or more important structural changes in the market. Violent price competiton would be likely to develop, for example, if for some unforeseen reason the overall size of the market contracted significantly. In these circumstances high fixed marketing costs and over-expanded plant capacity would probably have the same consequences for the wide range antibiotics which they have had for penicillin. Alternatively, because it is available in very similar forms from three different manufacturers, this situation might come about if one brand of erythromycin achieved a commanding position. But if these or similar developments do not take place—and more important, if all of the wide range antibiotics are not displaced suddenly by some new research result—it seems to me that promotion will have more competitive importance than price in this market during the next few years. The model of the cigarette industry is suggestive. Here a few important branded products compete, using promotional and marginal differentiation of their products, for a share of a slowly expanding total market; and price competition has no great importance. We may hope of course that singing commercials or their pharmaceutical equivalents will find no place in the promotion of these products.

Specialized Antibiotics

I will discuss the market for these products very briefly. A chart gives details of the production of streptomycin (and dihydrostreptomycin) in this country from 1946 through June, 1953. The distinct flattening of the curve in this chart in the recent past is in



part attributable to the fact that during this period a new product, Isoniazid, displaced streptomycin to some extent in the treatment of tuberculosis. The recent use of the two agents in combination may have arrested the further development of this trend.

Marketwise, streptomycin and its variant dihydro-

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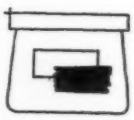

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streptomycin differ from the other important antibiotics in a number of important ways. Fewer companies are involved in their production and distribution. And the fact that the chief market for it is in the treatment of tuberculosis makes investment in its production particularly hazardous. If it is displaced by some new product which can be produced easily in the underdeveloped countries of the world, export markets for streptomycin will disappear. Such a development would be a critical one; 51.6 per cent of United States production was exported during 1952.

But it also resembles the penicillin market in important ways. One company's streptomycin is essentially the same as another's; and we have seen that this characteristic of an antibiotic, coupled with overexpansion of the plant capacity required to produce it, usually results in a sharp drop in its price to a level not much above production costs. And such a drop in the price of streptomycin has occurred, as this chart makes clear. At the moment then, the future of this antibiotic is problematic. It will have importance in the treatment of tuberculosis only until it is replaced by a better agent. Much time and effort are being devoted to the search for such an agent, but its discovery may be soon or long delayed. In combination with penicillin, it will probably continue to be used in some quantity for a long time. But if its future is to be assured new uses for it must be developed.

New Uses for Antibiotics

No discussion of the marketing problems associated with antibiotics would be complete without some brief comment about the non-pharmaceutical markets for these materials. The most important of these markets is provided by the increasing use of antibiotics as animal feed supplements. In 1951 sales of antibiotics for this purpose totalled $17.5 million.

Independent work announced by Dr. R. N. Goodman and Dr. H. C. Young of the University of Missouri and the Ohio State Experiment Station at the Institute of Biological Sciences meeting in Madison last month also suggests that the application of a spray formulation of streptomycin to apple and pear trees will control a bacterial disease of considerable economic importance. Because of it, raising pears East of the Rocky Mountains has become uneconomic. And if a streptomycin formulation can control it at suitable cost, an important new market for this antibiotic will have been opened up.

There are a number of other applications of antibiotics in agriculture and industry under study in our laboratories and those of other companies in the industry which also give promise of ultimate importance. If our present enthusiasm about some of them is sustained by further work, an immediate solution to some large part of the industry's problem for overexpanded plant capacity for the production of antibiotics may have been found.

Conclusion

I would close by saying that the market outlook for antibiotics in pharmaceutical applications is a good but not a roseate one. Facilities for the production of the antibiotics already in widespread use are now larger than the demand for these products justifies, certainly; but the use of these materials in other applications may well reduce the overall importance of this problem, and in any event rising pharmaceutical consumption during the next few years will do much to solve it. Within the area of pharmaceutical applications, there remain a number of infectious diseases for which no satisfactory remedy exists; the discovery of new antibiotics which will cope successfully with them may produce new opportunities as large as those which confronted us after the discovery of the first wide range antibiotic.

Prescription Trends and What Makes Them

(*Continued from page 477*)

10.46 per cent called for analgesics and antiarthritics.
9.66 per cent were for vitamins—hematinics and related products.
9.39 per cent for sedatives and hypnotics.
6.38 per cent antihistaminics.
5.87 per cent for antacids, antispasmodics, and peptic-ulcer therapy.
5.31 per cent cough preparations and nasal decongestants.

The average price for these 231,860 prescriptions was $2.17. Compared with a similar study conducted during 1951, we find antiarthritics on the increase along with products used to lose weight. It is also significant that vitamin-hematinic and related preparations are also showing steady progress.

The better-known pharmaceutical houses have an estimated 15,000 detail men calling on physicians every working day in the year. These representatives are a well-trained and well-educated group of men. Many of them are pharmacists themselves, with limited-to-extensive experience behind the counter. They are pollenizers of information; picking up good ideas here and spreading them helpfully throughout the country. We did not find one out of the five-hundred-odd busy pharmacies we studied that did not associate themselves very closely with the pharmaceutical representatives covering the territories in which these stores were located.

The question of whether a reputable pharmaceutical company remains in business is how successful the company's representatives are in creating specifications for their specialty products. The successful prescription pharmacy watches the sales performance of each of the representatives calling on him, and the more prescription response he gets from the efforts of particular detail men, the more likely he is to go all out with those men in keeping adequate stocks and promoting the physicians.

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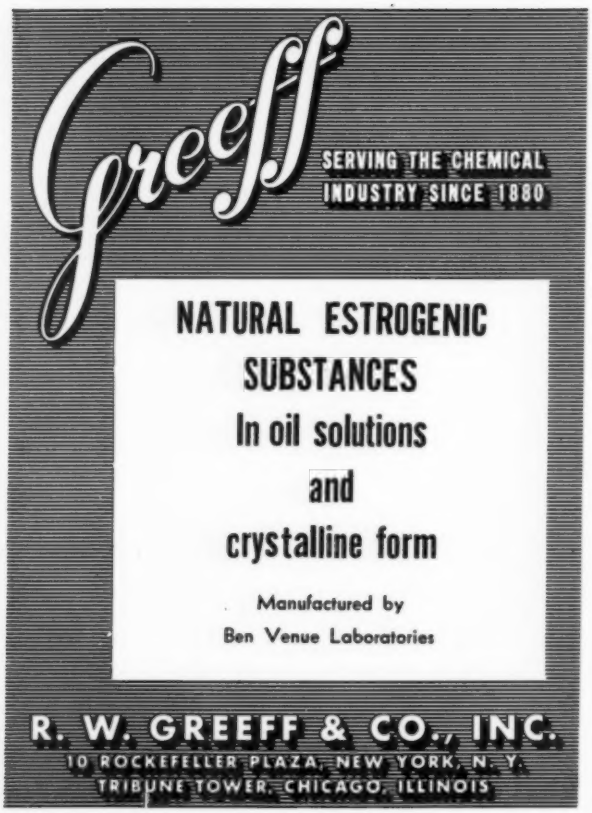

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Clark-O'Neill, a medical mailing service, reported recently that a busy general practitioner last year received 3,305 separate mailings of which 2,883 were from pharmaceutical manufacturers. And, as might be expected, there was a distinct correlation between the number and frequency of mailings for particular therapeutic classifications and the prescription-trend data we presented earlier; i.e., anti-infectives, antiarthritics and analgesics, and vitamins-hematinics were up front where we would expect them to be.

It is clear that many of the important advances in therapy come from the research laboratories of the pharmaceutical manufacturers. Highly-paid research teams working with outstanding clinicians are developing new and important drugs every year. These products are then placed in the hands of highly-trained marketing men whose job it is to show the representatives how and when the physicians should use the drug.

Our study among over five-hundred busy prescription pharmacies and almost one-thousand busy physicians showed that new-product information is remembered as being received most often from the following sources:

38 per cent of the time from the pharmacist.

41 per cent from the detail man.

21 per cent from direct mail, medical journal, and other sources.

It is readily apparent, then, that the pharmacist and the detail man constitute the major sources of information on new products. If the prescription department is to continue its phenomenal growth, the team of the pharmacist and detail man must learn to work closer. Together, these two men assist the medical profession in protecting the public's health and promoting a longer and more productive life for all.

Cough Syrup

(Continued from page 469)

the smaller drug and cosmetic houses selling mostly through agents. For the most part the ethical drug houses prepare a somewhat different type of expectorant, than those that I have thus far illustrated. Most of these syrups, such as Upjohns' Cheracol, contain codein phosphate, or some other respiratory sedative. Taking everything into consideration, Codein phosphate, or the codein salts, are by far the most frequently used sedatives for bronchial and similar respiratory diseases. The phosphate enjoys the most popularity, by reason of its solubility in water. Codein, however, is by no means the only sedative used in these preparations, indeed, there are several others of practical value, ethylmorphine hydrochloride, for instance, being a quite common ingredient also.

In searching the literature, it will be found that potassium guiacolsulfonate is very often incorporated into a cough syrup, for what reason, I shall not hazard a guess. There may be some beneficial action from it, but I shall quote a paragraph from the United States Dispensatory:

"Potassium guiacolsulfonate was introduced into

medicine on the theory that it would liberate guiacol in the body and exert the beneficial effects of this drug in bronchitis. There is, however, no reason to believe that the body can decompose sulfonates of any of the phenolic group; the body detoxifies the phenols by conjugating them as sulfonates. Some believe, however, that the molecule itself may have some influence upon the respiratory tract, although this is certainly not established."

REFERENCES

1. Peacock, J. A. Pha. A. 1923, 12, 774.
2. Modern Drug Encyc. 4th ed. Drug Pub.
3. United States Dispensatory 23rd ed.
4. Journal A. M. A. 1928, 90, 377.

Anti-Coagulants

(*Continued from page 473*)

plants and none of these duplicated the effect of this unknown derivative. Eventually it was isolated and characterized, though it was present in spoiled hay only to the extent of 0.003 per cent.

Once the chemical structure of this compound was known to be that shown in figure 3, it was a fairly simple matter to synthesize it from salicylic acid by a four or five stage process. When it was proved clinically that this toxic compound possessed the property of decreasing the prothrombin content of the blood and so retarding the production of thrombin; that it was effective in this respect when administered orally; and that it had a prolonged action; it was clear that in it there existed a cheap anti-coagulant drug which could supplement the effect of heparin.

It is believed that dicumarol acts on the body by suppressing the synthesis of prothrombin and factor VII in the liver; it has no effect on the molecules of these compounds that are already circulating in the blood[4]. One of the disadvantages of dicumarol is that it takes from 48 to 72 hours for a dose to have its full effect and it is assumed that this latent period is the survival time of the circulating prothrombin and factor VII.

Theoretically, dicumarol is not an anti-coagulant, as defined above, because it has no affinity for thrombin. But, because it obstructs the coagulation mechanism at an earlier point than the thrombin—fibrinogen reaction, the onset of the effect is delayed until the result of the obstruction travels round to the vital point, then its effect is that of a true anti-coagulant.

Ethyl Biscoumacetate

As indicated above, the main clinical disadvantage of dicumarol is its delayed action. Ethyl biscoumacetate was the first result of the search for an improved drug. From the formula given in figure 4, it can be seen that it also is a dicoumarin derivative but that an esterified acetyl group replaces a hydrogen atom on the link joining the two hydroxy-coumarin molecules[5]. This compound is more soluble than dicumarol, which may partly explain why it acts more quickly and must be given in larger and more frequent doses than the latter.

Unfortunately, patients show wide individual differences to treatment with this drug and there are

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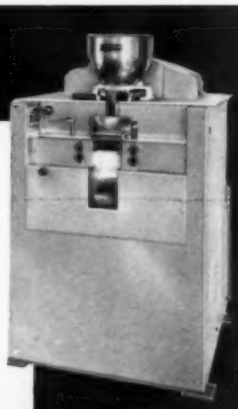

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liable to be great fluctuations in the day to day clotting properties of their blood. This makes it difficult to predict the result of a particular dose and to maintain the condition of the blood always within the therapeutic range. It appears that ethyl biscoumacetate acts on the mechanism of blood coagulation similarly to dicumarol, but that it is directed principally at the inactivation of factor VII. Experiments indicate that about 25 per cent of the ethyl biscoumacetate administered is metabolized in the organism per hour, compared with dicumarol's rate of biotransformation, which is about 40 per cent per day. By treatment with the former compound, therefore, the latent period between oral administration and the effect on blood clotting is greatly reduced and when it is discontinued, the prothrombin content of the system will increase sufficiently in eight to 12 hours to control bleeding.

Another coumarin derivative that has passed clinical tests as an anti-coagulant is Cumopyran or anticoagulant No. 63 which is said to be more predictable in its clinical effect and to be less prone to cause day-to-day fluctuations in the condition of the blood, than ethyl biscoumacetate. Unfortunately, the effect persists for a longer period after the administration of the drug has been discontinued. This point, about the persistence of the effect, is an important one for all the synthetic anti-coagulants because there is always present, the danger that their administration will lead to hemorrhage and the correction of this condition, if it

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occurs, requires that cessation of dosage should be followed, as quickly as possible, by the disappearance of the effect. This, of course, is not so with delayed action drugs and means that an effective antidote must be available.

Phenylindanedione

This is the most recent addition to the group and is noteworthy because it is not a coumarin derivative. The initial reaction to it by clinicians is that it simplifies anti-coagulant therapy and increases its reliability. It is reported[7] to be less toxic, more rapid in its action, more uniform in its effect and, therefore, requires less stringent laboratory control of the patient's dosage.

Dextran Sulphate

Since, from a physiological point of view, heparin is the best of the anti-coagulants, it is not surprising that efforts have been made to overcome its scarcity by preparing other sulfated polysaccharides and testing their suitability for this purpose. Several have been found with anti-coagulant properties, but their toxicity is usually too high for clinical use. The first compound of this type to offer promise of approaching heparin in this respect is dextran sulfate.[8,9]

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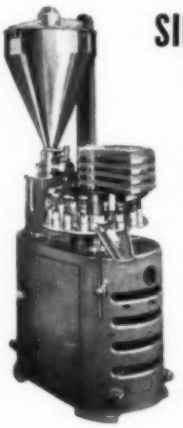

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having approximately the same molecular weight as blood plasma. There is large scale production of it in this form, for use as a plasma expander. This material can be converted into dextran sulphate relatively simply and provides a cheap and plentiful raw material. In early experiments it was found that there appears to be an optimum chain length, which is between 5 and 20 glucose units. Below this, it is too quickly eliminated from the blood stream to have much effect on the clotting time. Above this, one encounters toxicity in the form of a greatly increased tendency to hemorrhage. If, therefore, a dextran of molecular weight about 7000 is sulfated to the extent of 1.0 to 1.3 sulfate groups per glucose unit, there is produced a compound with a high anti - coagulant activity — about 15 International Heparin units per milligram.

Physiologically, dextran sulfate is a true anti-coagulant in that it has a greater affinity for thrombin than has fibrinogen and so retards the conversion of the latter to fibrin. It is more stable than heparin, but even the most active molecules are less potent than the least active form of heparin and it also has the disadvantage of requiring to be administered by injection. However, it is not unlikely that this line of investigation may eventually lead to a product having the advantages of heparin without its disadvantages. For example, tests are being made now on the sulfate of laminarin which is a similar polysaccharide but derived from seaweed, instead of bacterial synthesis as dextran is.

Antidotes

It has already been mentioned that the availability of effective antidotes is a necessary safety measure in anti-coagulant therapy. This is particularly so when the coumarin derivatives are being used because they have a delayed action. About twenty years ago, a hemorrhagic disease in chicks was noticed and attributed to a dietary deficiency. The deficient factor was called Vitamin K, from the German name "Koagulations Vitamin", and was identified in 1935, independently by Dam and by Almquist and Stockstadt, as 2-methyl-3-phytyl-1,4-naphthoquinone. This, the naturally occurring compound, is known as Vitamin K1 to distinguish it from other synthetic compounds which also possess the physiological property of reversing a hemorrhagic condition. These other analogues are derived from the parent compound, 2-methyl-1,4-naphthoquinone, by substitution of other groups, usually on carbon 3; they may have the advantage of being water soluble and, in some cases, more potent than Vitamin K1. Bleeding caused by over-dosage of the synthetic anti-coagulants is usually overcome by treatment with one of these antidotes.

The shorter period of action possessed by heparin and the ease with which it can be neutralized by transfusion of fresh blood gives it a wider margin of safety, but when an antidote for it is needed, the preferred compound is protamine sulphate. Protamine is a natural product

obtained from the sperm or testes of fish. Sometimes toluidine blue is used as an antidote, in preference to protamine sulphate, the choice depending on the cause of bleeding.

Conclusion

Anti-coagulants have added a powerful weapon against the effects of thrombo-embolic complications but considerable judgment is required to evaluate the pros and cons of this form of treatment compared with surgical intervention, in a particular case. It is the consensus of opinion amongst the experts that such disorders of the blood can be combated successfully with anti-coagulants but there are certain prerequisites, such as correct mode of administration, adequate dosage and early diagnosis.

REFERENCES

1. J.A.C.A. 1950, 72, 5796.
2. Helv. Chim. Acta. 1951, 34, 2311.
3. J. biol. Chem. 1941, 138, 513, 529.
4. A. J. Quick, Practitioner 1951, 166, 213.
5. B. B. Brodie, J. Pharmacol. + Exp. Ther. 1952, 106, 453.
6. N. W. Barker et al. J. Am. Med. Assoc. 1952, 148, 274.
7. M. Toohey, Brit. Med. J. 1953, 1, 650.
8. H. E. Stavely et al. Fed. Proc. 1952, 11, No. 1.
9. C. R. Ricketts, Biochem. J. 1952, 51, 129.

The Drug Store Picture

(*Continued from page 475*)

store profit in the drug stores with prescription income under 25 per cent of total sales was $11,097.71. For the stores doing 25 to 40 per cent in prescriptions, this total was $12,961.78; and for stores doing over 40 per cent in prescriptions, it was $17,933.48. Thus, on total sales which were $8,632.26 above those of the stores with prescription income under 25 per cent of sales, the proprietors who managed stores with over 40 per cent prescription income obtained a total return that was $6,835.77 higher.

6. The investment in prescription stock in drug stores with over 40 per cent of their income from prescriptions was something over twice as much as it was in the drug stores with a prescription income under 25 per cent of total sales. However, the prescription income of the group over 40 per cent was almost four times what it was in the first group. That certainly does not look as though new prescription items are forcing drug store proprietors to the brink of bankruptcy.

7. The result of the difference described above is that in the drug stores with over 40 per cent of their income from prescriptions, $1.00 of prescription income was obtained from each 14.4 cents invested in prescription stock. For the under 25 per cent group of stores, 25.9 cents was needed; and for the 25 to 40 per cent group, 18.5 cents.

8. With increases in the proportion of prescription income to total sales, there is a marked and notable rise in the average profit per dollar invested in all merchandise stock—prescription and nonprescription. The overall average for the 1,305 stores was 36.0 cents; for stores with under 25 per cent in prescriptions it was 33.2 cents; for the 25 to 40 per cent group it rose to 37.2 cents; and for the over 40 per cent group it climbed

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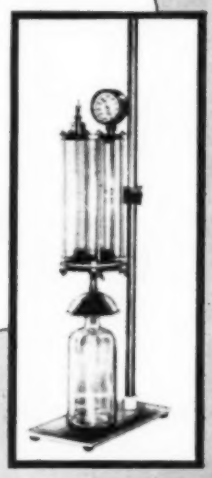

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to the astonishing total of 56.9 cents.

9. These are not freak or unusual results. The corresponding figures for 1951 for 726 drug stores grouped in the same manner were, respectively, 33.7 cents, 40.7 cents, and 51.3 cents.

Among the 785 stores, there were 300 that had supplied equally complete data on prescription department operations for 1951. Of this group, 237 had an increase and 63 had a decrease in sales during 1952. The over-all increase for the 300 stores averaged 6.6 per cent, comparing favorably with the 6.9 per cent increase in sales for the 1,305 stores on which the 1952 Digest is based. Noteworthy conclusions to be drawn from the two-year figures of the 237 stores showing an increase in sales, are:

1. The rate of gain in prescription income was twice that from other sales—16.0 per cent as against 8.0 per cent.

2. These 237 drug store proprietors did not raise their own salaries in the same proportion as the increase in sales, but employees' salaries increased at a rate almost half again as fast as that of the sales gain.

3. The rate of increase of store expenses other than salaries and rent was close to twice that for sales.

4. Gross margins held steady and, in fact, went up a little.

5. Success in maintaining margins and in increasing sales brought a gratifying increase in the income of these 237 store owners despite the bite that was taken out of these gains by a disproportionate rise in some store expenses. For those proprietors who worked full time in their stores as managers, the 1952 total for their services plus profit on the investment in the store was $12,986. In 1951 it was $11,884. This is an increase of 9.3 per cent.

Conclusions to be drawn from a comparison of the figures of the 63 stores which had a decrease for 1952, are:

1. All of the sales decrease in these 63 stores was from sources other than prescriptions. In fact, the prescription income was up slightly in 1952 as compared with 1951.

2. If these stores had nor been able to obtain a rise in prescription income, the drop in their total sales would have been much larger than it actually was.

3. Despite the handicap of falling sales, the owners were able to hold the percentage amounts of margins in 1952 at the same level it was in 1951.

4. There was success also in reducing the amount paid for employees' salaries. This reduction was at a rate nearly twice that of the over-all sales decrease.

5. A rise occurred, however, in all other items of store expense. The proprietors increased their own drawings slightly. The rental percentage was up, and an increase in the amount paid for miscellaneous operating costs.

6. All this had the effect of cutting profits at a rate that was almost six times as much as the sales reduction.

7. Store owners who managed their own businesses

experienced a drop in their total income. The combined total of proprietor's salary and profit was $9,614 in 1952 against $10,177 in 1951. That is a reduction of 5.5 per cent.

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(*Continued from page 467*)

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(*Continued on page 572*)

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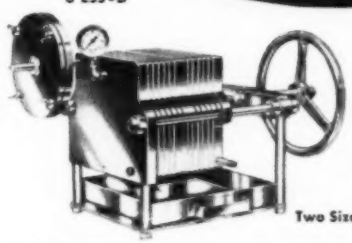

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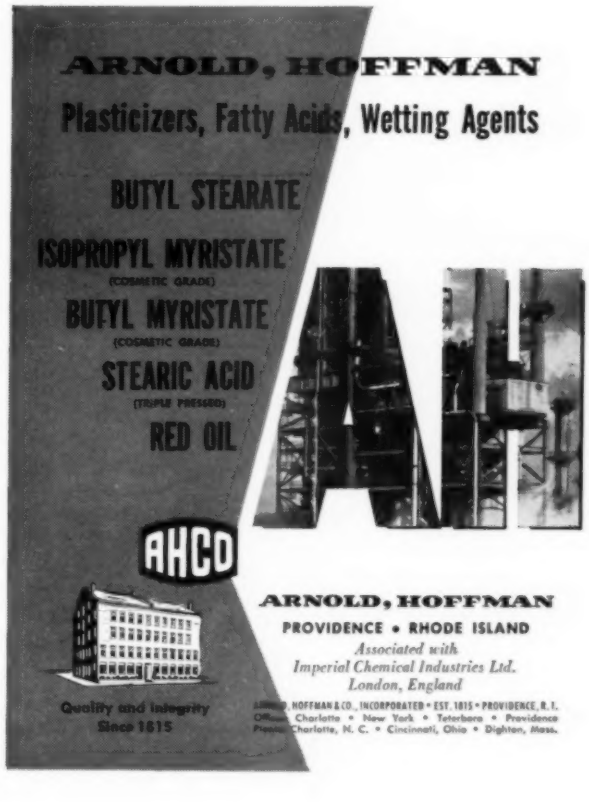

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2,648,679—Wisconsin Alumni Research Foundation—Dodecahydrochrysenes.
2,648,684—Hoffmann-La Roche—Amino Derivatives of Benzofuran.
2,648,686—Merck—Reduction of Steroid Ketones to Corresponding Methylene Analogs.
2,648,688—Merck—Prepn. of 21-Alkyl Ethers of Cortisone.
2,648,699—G. D. Searle & Co.—Quaternary Ammonium Salts of Diisopropylaminoalkyl Esters of Diphenylacetic Acid.
2,648,700—G. D. Searle & Co.—2-Methyl-2,7-Dihydroxy - Octahydrophenanthrene - 1 - Propionic Acid.
2,648,708—Hoffmann-La Roche—Benzamides.
2,648,710—Hoffmann-La Roche—Bis-Quaternary Salts of 1,10-Bis - (Dialkylamino) - 5,6 - Dithia - Decane.
2,649,399—Ayerst, McKenna & Harrison, Ltd.—Conjugated Oestrogenic Quaternary Ammonium Salts.
2,649,400-2—Upjohn—Steroids.
2,649,443—Commercial Solvents—Penicillin Salts of N-Methyl-(1,2-Di-p-ethoxyphenyl-2-Hydroxyethyl) Amine.
2,649,444—Burroughs Wellcome — Prepn. of Omega-(Tertiary amino) Alkyl Ketones.

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2,649,451—**Bristol Labs. — Copper 7 - Benzyl - 8 - Quinolinate.**

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2,649,455-6—**Maltbie Labs. — Alpha, Alpha - Diphenyl - Gamma - Piperidyl Butronitriles and Derivatives.**

2,649,480—**Chas. Pfizer—Oxytetracycline Recovery from Aqueous Solutions.**

2,650,216—**Chas. Pfizer—Crystalline Naphthalene Sulfonate Salts of Streptomycin and Dihydrostreptomycin.**

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2,650,218—**Bristol Labs.—Esters of Penicillin from Active Halogen Compounds.**

2,650,221-2—**Merck—Prepn. of 2 - Amino - Quinoxalines.**

2,650,223—**Abbott Labs.—2,5-Diketopiperazines.**

2,650,224—**Schenley Industries—Salts of 7-Iodo 8-Hydroxy-Quinoline-5-Sulfonic Acid and 7-Haloquinolines Carrying a Di - alkylamino - Alkyl - Amino Substituent in the 4-Position.**

2,650,225—**Ward Blenkinsop & Co.—Manufacture of Meso-Halogeno-Aza-acridines.**

2,650,226-9—**Schenley Industries — Furo and Thieno Quinaldines.**

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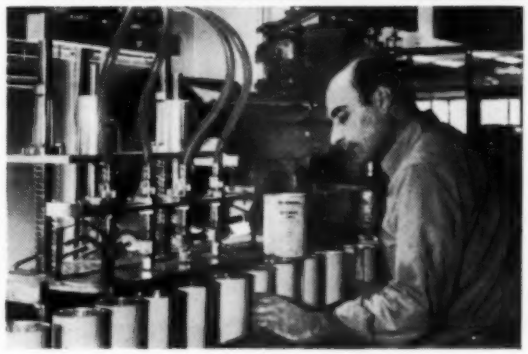

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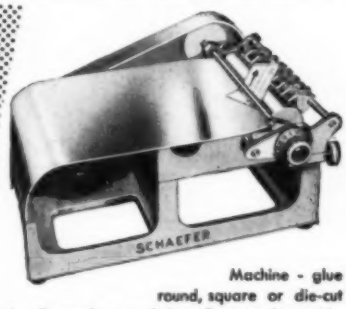

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